Air Quality in Ontario
1988

Environment
Environnement

ERRATA

The following corrections should be noted and applied to the report entitled " Air Quality in Ontario 1988 ":

a) on page 3, paragraph 6 — O_2 should be replaced by O_3.

b) on page 3, paragraph 8 — NO_4 should be replaced by SO_4.

c) on page 7, Table 1 — number of 1-hour SO_2 exceedances at Copper Cliff should read 85, not 6.

d) on page 15, Table 5 — highest geometric mean for Pb at Mississauga should read 1.87, not 2.0 .

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AIR QUALITY IN ONTARIO
1988
A review of the air quality monitoring program

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SUMMARY

In 1988, the routine air monitoring program in Ontario included the measurement of nine gases at up to 77 locations and the measurement of particulates at 152 locations.

For gases, the provincial criterion most frequently exceeded was for ozone and was largely associated with medium- and long-range transport of pollution from the United States. Out of 48 ozone stations, 46 measured exceedances of the criterion at least once during the year. Exceedances for sulphur dioxide and total reduced sulphur occurred at some stations as well. The ten-year trends indicate improvement for sulphur dioxide, carbon monoxide and total reduced sulphur, but little change in hydrocarbons, and nitrogen oxides. Ozone, confined to the warm season showed a distinct peak in 1988.

For particulates, the 24-hour criterion for total suspended particulate was frequently exceeded. Out of 152 stations, 119 measured at least one exceedance during the year. Thirty-seven stations had exceedances of the one-year criterion. Five stations measured exceedances of the criterion for lead, and two stations measured exceedances for nickel. No other particulate criteria were exceeded. The ten-year trends show improvement in total suspended particulate as well as in each of the commonly monitored metals: copper and lead. Sulphate and nitrate have been relatively constant over the ten-year period.

The new Air Quality Index system implemented in June 1988 showed that very good to good air quality levels prevailed at all sites across the province (94% of the time or better). There were no incidences of very poor air quality reported at any location. Ozone is by far the most frequent cause of high index readings in Ontario.

The Air Pollution Index, which is still the basis of the alert system for air pollution control in Ontario, had exceedances of the advisory level of 32 at Hamilton and Etobicoke West. At Hamilton the API reached a maximum value of 43 on November 26 while on the same day at Etobicoke West an AQI maximum of 33 was attained.

INTRODUCTION

This report describes the 1988 Ontario air quality monitoring program including a summary of the measurements of gases and particulate matter during the year. It is intended for use in conjunction with an Appendix which appears in a separate volume.

Ambient air quality data are subjected to stringent quality control and quality assurance programs. The Air Resources Branch maintains a reference standards laboratory with air quality standards that are referenced to the U.S. National Bureau of Standards as well as to the Pollution Measurement Division of Environment Canada. Quarterly performance audits on the monitoring equipment and the data acquisition system in the MOE network are carried out to achieve the utmost in data accuracy.

In this report, the following are discussed for each pollutant: characteristics, effects, Ontario criteria (if any), sources, method of monitoring, locations (and frequency) of sampling, summary of sampling results, and ten-year trend.

Also, tables provide the location of stations and the sample distribution information which includes means, maxima and the number of exceedances of the Ontario criteria.

The entire continuous (hourly) network is summarized in Appendix Table A-1 and Maps 1 and 2. This table gives station name, numerical identifier, and an indication of the "continuous" pollutants measured. Letter codes indicate whether data were telemetered or chart-read.

The "continuous" pollutants include SP (suspended particles) as well as the following gases:

SO_2	(sulphur dioxide)
CO	(carbon monoxide)
O_2	(ozone)
NO_2	(nitrogen dioxide)
NO	(nitric oxide)
NO_x	(oxides of nitrogen)
THC	(total hydrocarbons)
RHC	(reactive hydrocarbons)
TRS	(total reduced sulphur)

Section A of this report describes each of the "continuous" pollutants in sequence. Section B deals with the new Air Quality Index system implemented in June, 1988 as well as the ten year history of the the Air Pollution Index.

The particulate (daily) network is summarized in Appendix Table A-3 and Maps 4 and 5. This table provides station name, numerical identifier, and the various "daily" pollutants measured. Also, numerals indicate the monitoring cycle frequency in days. Some additional codes are defined in the key at the top of the table. The main particulate pollutants measured are:

TSP	(total suspended particulate)
Cd	(cadmium)
Cr	(chromium)
Cu	(copper)
Fe	(iron)
Mn	(manganese)
Ni	(nickel)
Pb	(lead)
V	(vanadium)
NO_3^-	(nitrate)
NO_4^{2-}	(sulphate)

Section C describes each of the "daily" or particulate pollutants under the headings of TSP, Lead, Trace Metals, Nitrate and Sulphate.

Queries relating to this report or requests for data (magnetic tape or hardcopy) should be addressed to:

Air Quality Assessment and
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Air Resources Branch
125 Resources Road
Etobicoke, Ontario
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Telephone (416) 235-5780
or (416) 235-5778.

GLOSSARY

COH - an estimate of the amount of particulate matter by measuring the amount of light scattering.

Criterion - a desirable maximum ambient air exposure (based on effects).

Exceedance - an occurence that exceeds the Ontario standard.

Detection limit - the minimum air concentration of a pollutant that can be determined by an analytical method.

Geometric mean - calculated by taking the nth root of the product of all (n) values in a data set.
- provides a better indication than arithmetic mean of central tendency for a small data set with extreme values.

Percentile value - the percentage of the data set that lies below the stated value
- for example, if the 70 percentile value is 0.10 ppm, then 70% of the data are below 0.10 ppm.

Primary pollutant - a pollutant which is directly emitted to the atmosphere.

Secondary pollutant- a pollutant which is formed from other pollutants present in the atmosphere.

"Continuous" - a pollutant for which a continuous record exists; effectively, pollutants which have hourly average data (Maximum 8760 values per year).

"Daily" pollutant - a pollutant for which there exists only a 24 hour or daily value (maximum 365 values per year).

ABBREVIATIONS

AQC - air quality criterion.

COH - coefficient of haze.

ppb - parts (of pollutant) per billion (parts of air).

ppm - parts (of pollutant) per million (parts of air).

µg/m³ - micrograms (of pollutant) per cubic metre (of air).

SECTION A POLLUTANTS MEASURED BY CONTINUOUS MONITORING (HOURLY DATA)

SO_2

SULPHUR DIOXIDE

1.1 Characteristics

Colourless gas. Strong, pungent odour over 0.5 ppm.

1.2 Effects

1 hour average

less than .16 ppm	- no known effects
0.16 ppm	- injurious to sensitive species of vegetation in combination with ozone.
0.34 ppm	- odourous, increasing vegetation damage
2.00 ppm	- increasing sensitivity of asthmatics and bronchitics

1.3 Ontario Criteria

0.25 ppm (1 hour)
0.10 ppm (24 hours)
0.02 ppm (1 year)

1.4 Sources

80% of the SO_2 emitted in Ontario originates from non-ferrous smelters and electric utilities.

The bulk of the rest comes from other industrial sources including iron ore smelters, petroleum refineries, pulp and paper mills and area sources including vehicles and residential, commercial and industrial heating.

1.5 Method of Monitoring

Fluorescent excitation of SO_2 by ultra-violet radiation.

1.6 Locations of Monitoring

The Appendix provides a description of the provincial SO_2 network (Table A-1)

SO_2 monitoring was carried out at 77 locations in 1988.

1.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the maximum one-hour and 24-hour values are provided in the Appendix (Table A-5). Also given are the number of exceedances of the sulphur dioxide criteria (see Section 1.3).

It should be noted that the increase in the annual SO_2 concentrations at some locations in 1988, may be partially artificial due to the implementation of the new telemetry system in June of the same year. Initial evaluation of the new system by the Air Resources Branch, showed that the main difference between the old and new system was due to their difference in the cut off points for rounding off the readings. Since the new telemetry system was shown to be more accurate in its estimations as compared with the old system, the decision was made: 1) to replace the old system with the new system and 2) no attempt will be made to correct the SO_2 data obtained prior to the implementation of the new system.

The lowest annual average levels measured in the province were at Thunder Bay where the hourly SO_2 never exceeded .04 ppm.

The greatest number of exceedances of the one-hour criterion occurred at Copper Cliff in Northeastern Ontario and the highest annual mean was measured at Thorold near an abrasives manufacturer.

There were a total of 17 stations which exceeded the hourly criterion at least once and seven which exceeded the 24-hour criterion. The Thorold station exceeded the annual criterion. (See also Table 1).

1.8 Ten-Year Trend

The trend in mean annual SO_2 at locations which possess a ten-year record is shown in Table A-6 and is summarized for the province in Figure 1.

Mean ambient SO_2 levels improved by about 45% over the ten-year period. This is primarily due to tighter industrial emission controls.

SP

SUSPENDED PARTICLES

2.1 Characteristics

A relative measure of suspended particulate matter of size most likely to reach the lungs (diameter less than 5-10 microns). Determined by the amount of soiling caused by air flow on a filter medium.

2.2 Effects

1 hour average

less than 2.0 COH units - no known effects
2.0 COH units - decrease in visibility
4.0 COH units - soiling evident
6.0 COH units - increasing sensitivity of asthmatics and bronchitics

2.3 Ontario Criteria

1.0 COH units (24 hours)
0.5 COH units (1 year)

2.4 Sources

Industrial processes which include combustion, incineration, construction, mining, metal smelting, processing and grinding. Also motor vehicle exhausts.

Natural sources include wind-blown soil, forest fires, ocean spray, volcanic activity.

2.5 Method of Monitoring

Continuous paper tape sampler with sampling inlet and flow rate regulated to favour small particles.

SP is determined by drawing a known volume of air through a portion of tape and then measuring the reduction in the light transmitted relative to a clean section of tape.

2.6 Locations of Monitoring

The Appendix provides a description of the provincial SP network (Table A-1).

Suspended particles were measured at 47 locations in 1988.

2.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; the maximum one-hour and 24-hour values; and the number of exceedances of the SP criteria (see Section 2.3) are provided in the Appendix (Table A-7).

The lowest levels measured in the province were at Thunder Bay where the SP averaged 0.03 units.

The greatest number of exceedances of the 24-hour criterion occurred at the Mission site (381 Yonge Street) in Toronto and the highest measured value was at Niagara Falls.

There were a total of 27 stations which exceeded the 24-hour criterion at least once and four which exceeded the one year criterion (See also Table 1).

2.8 Ten-Year Trend

The trend in mean annual SP at selected Ontario cities is shown in Table A-8 and is summarized for the province in Figure 1.

Fine particulate, as determined by SP, has remained relatively constant over the past ten years.

TRS

TOTAL REDUCED SULPHUR

3.1 Characteristics

Primarily hydrogen sulphide (rotten egg odour). Also methyl mercaptans (rotten cabbage odour over 5 ppb).

3.2 Effects

1 hour average

less than 5 ppb	- no known effects
5 ppb	- odour threshold
27 ppb	- extremely odorous
1,000 ppb	- sensitive individuals may suffer nausea and headache due to severe odour

3.3 Ontario Criteria

Methyl Mercaptans - 10 ppb (1 hour)
Hydrogen Sulphide - 20 ppb (1 hour)
TRS (from Kraft Pulp Mills) - 27 ppb (1 hour)

3.4 Sources

Industrial - steel industry, pulp and paper mills, refineries. Natural - swamps, bogs, marshes.

3.5 Method of Monitoring

Reduced sulphur compounds are oxidized to SO_2 and the SO_2 concentration is measured using fluorescent excitation by ultra-violet radiation.

3.6 Locations of Monitoring

The Appendix provides a description of the provincial TRS network (Table A-1).

TRS monitoring was carried out at 28 locations in 1988.

3.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the one-hour and 24-hour maxima are provided in the Appendix (Table A-9).

The lowest average levels measured in the province were at Thunder Bay. The highest annual mean (6.8 ppb) was measured at Cornwall (St. Peters School) and the greatest value measured (268 ppb) occurred at Fort Frances in Northwestern Ontario near a kraft paper mill. (See also Table 1).

3.8 Ten-Year Trend

Table A-10 shows the trend in mean annual TRS for selected Ontario cities while Figure 1 shows the provincial trend, with a minimum in 1985.

CO

CARBON MONOXIDE

4.1 Characteristics

Colourless, odourless.

4.2 Effects

1 hour average

less than 30 ppm	- no known effects
30 ppm	- increased cardiovascular symptoms on smokers with heart disease
50 ppm	- increasing cardiovascular symptoms on non-smokers with heart disease. Some visual impairment.

4.3 Ontario Criteria

30 ppm (1 hour)
13 ppm (8 hours)

4.4 Sources

Primary source (about 80%) is motor vehicles. A secondary source is fossil fuel combustion for building, heating and commercial/industrial operations.

4.5 Method of Monitoring

Non-dispersive infrared photometry based on the preferential absorption of infrared radiation by CO.

4.6 Locations of Monitoring

The Appendix provides a description of the provincial CO network (Table A-1).

CO was monitored at 29 stations in 1988.

4.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the maximum one-hour and eight-hour values are given in the Appendix (Table A-11).

The lowest levels measured in the province were at Sarnia (Centennial Park) and North Bay while the highest mean was at the Mission site (381 Yonge Street) in Toronto. The highest measured one-hour and eight-hour values were also at the Mission site. This monitor is located in the Yonge Street corridor exposing it to motor vehicle exhaust..

There were no exceedances of the Ontario one-hour criterion of 30 ppm. However, the Mission monitor registered 6 exceedances of the eight-hour criterion. (See also Table 1.)

4.8 Ten-Year Trend

There was a 35% decline in ambient CO levels from 1979 to 1983 however, for the past 5 years CO levels have remained constant. (See Figure 1 and Table A-12). This is due primarily to tighter controls on automotive emissions.

THC/RHC

HYDROCARBONS

5.1 Characteristics

Primarily methane (colourless, odourless) which is present at about 1.5 ppm in the ambient atmosphere. Non-methane hydrocarbons (or reactive hydrocarbons) are usually present at much lower levels. This fraction reacts with nitrogen oxides in the presence of sunlight to form ozone.

5.2 Effects

No known direct effects on health or vegetation at ambient levels.

5.3 Ontario Criteria

None. However, criteria and standards exist for specific hydrocarbons and other organics.

5.4 Sources

Natural sources include trees and other vegetation and decay of animal and plant material.

Anthropogenic sources include motor vehicles, gasoline storage tanks, petroleum and chemical industries, landfill sites, paint manufacture, application and fermentation.

5.5 Method of Monitoring

Calibrated flame ionization detector.

5.6 Locations of Monitoring

The Appendix provides a description of the provincial THC/RHC network (Table A-1).

RHC was monitored at six stations while THC was monitored at 17 locations in 1988.

5.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the maximum one-hour and 24-hour values are given in the Appendix (Tables A-13 and A-15).

The locations and values for the lowest, and highest means are given in Table 1. The highest one-hour maximum concentration of reactive hydrocarbon was measured at Nanticoke near a petroleum refinery while the highest 1-hour total hydrocarbon value for the year was measured at Etobicoke (Centennial Park).

5.8 Ten-Year Trend

The trend in the annual average of THC at the 7 stations which have a ten-year record is shown in Table A-14 and is summarized for the province in Figure 2. THC levels have been relatively constant over the ten-year period.

NO_2

NITROGEN DIOXIDE

6.1 Characteristics

Brown gas. Pungent, irritating odour over .10 ppm.

Oxidation product of nitric oxide (NO) which is the primary NO_x emission. Reacts with hydrocarbons in sunlight to form ozone; and with water to form nitric acid, a component of acid rain.

6.2 Effects

1 hour average

less than .10 ppm	- no known effects
0.10 ppm	- odour threshold
0.25 ppm	- some increase in bronchial reactivity in asthmatics
0.52 ppm	- increasing sensitivity of asthmatics and bronchitics

6.3 Ontario Criteria

0.20 ppm (1 hour)
0.10 ppm (24 hours)

6.4 Sources

Anthropogenic - high temperature combustion processes including automobiles, power plants, incinerators and several chemical processes. In Ontario, motorized transportation accounts for about 60% of total NO_x emissions.

Natural - lightning, soil bacteria.

6.5 Method of Monitoring

Based on the principle of chemiluminescence involving a gas phase reaction of NO with ozone. For NO_2, the sample stream is passed through a catalytic converter where NO_2 is reduced to NO.

6.6 Locations of Monitoring

The Appendix provides a description of the provincial NO_2 network (Table A-1).

NO_2 monitoring was carried out at 36 locations in 1988.

6.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the maximum one-hour and 24-hour values are provided in the Appendix (Tables A-16). Also given are the number of exceedances of the nitrogen dioxide criteria (see Section 6.3).

The lowest levels measured in the province were at Dorset where the arithmetic mean was 2 ppb.

The highest annual mean (33 ppb) was measured in Etobicoke.

No stations exceeded either the one-hour or 24-hour criterion. (See also Table 1).

6.8 Ten-Year Trend

The ten-year trend in the annual average of NO_2 at selected Ontario cities as shown in Table A-17, and Figure 2 is relatively constant.

NO

NITRIC OXIDE

7.1 Characteristics

Colourless gas. Oxidizes to NO_2 in the presence of hydrocarbons and sunlight.

7.2 Effects

No known direct effects on health or vegetation at ambient levels.

7.3 Ontario Criteria

None

7.4 Sources

Same as for NO_2.

7.5 Method of Monitoring

Same as for NO_2.

7.6 Locations of Monitoring

Same as for NO_2.

7.7 Monitoring Results

Dorset had the lowest mean and Etobicoke South the highest. (See Appendix Table A-18 for the data summaries.)

7.8 Ten-Year Trend

Figure 2 and Table A-19 show little change in NO over the past ten years.

NO_X

TOTAL NITROGEN OXIDES

8.0

NO_x is assumed to be the sum of NO_2 and NO concentrations in the atmosphere (in parts per million). (See Appendix Table A-20 for the data summaries.)

O_3

OZONE

9.1 Characteristics

Colourless gas. Major component of photochemical oxidant compounds formed as the result of chemical reactions between nitrogen oxides and reactive hydrocarbons in the presence of sunlight.

9.2 Effects

1 hour average

less than 50 ppb	- no known effects
80 ppb	- injurious to many species of vegetation
120 ppb	- decreasing performance by athletes exercising heavily
200 ppb	- decrease in lung function in exercising subjects, eye irritation

9.3 Ontario Criteria

80 ppb (1 hour)

9.4 Sources

Ozone is produced by photochemical reactions and is not directly emitted into the atmosphere in significant amounts. Since it is formed downwind of nitrogen oxide and hydrocarbon sources and capable of travelling long distances through the atmosphere, ozone is a major manifestation of the long range transport of air pollution. Its formation and transport are dependent on meteorological factors. Warm temperatures are critical and elevated concentrations occur from May to September. Low level (tropospheric) ozone should not be confused with upper level (stratospheric) ozone which gives rise to the naturally occurring "ozone layer". The two layers rarely mix.

9.5 Method of Monitoring

An air sample reacts with ethylene to emit visible light (chemiluminescence) of intensity directly proportional to the ozone concentration. A number of stations still employ fluorescence for ozone detection.

9.6 Locations of Monitoring

The Appendix provides a description of the provincial O_3 network (Table A-1).

Ozone monitoring was carried out at 48 locations in 1988.

9.7 Monitoring Results

The distribution by percentile of the hourly data; the mean; and the maximum one-hour and 24-hour values are provided in the Appendix (Table A-21). Also given are the number of exceedances of the ozone criterion (see Section 9.3).

The lowest levels measured in the province were at the Science Centre in North York where the arithmetic mean was 9.0 ppb.

The greatest number of exceedances (566) of the one-hour criterion occurred at Long Point Provincial Park and the highest mean concentration (38.3 ppb) for the year was recorded there also.

There were a total of 46 stations which exceeded the criterion at least once. The highest measured concentration was 196 ppb at the CN Tower where the height of the monitor is 444 metres. Concentrations aloft are higher than those at ground level and during the night they are decoupled from the ground by the nocturnal inversion. (See Table 1)

9.8 Ten-Year Trend

Table A-22 provides the ten-year trend for average O_3 at the stations where a ten-year record exists. Figure 2 summarizes the data for the province. The provincial mean has remained relatively constant with the exception of 1988 during which long range transport of pollutants in conjuction with unusual meteorological conditions produced a provincial mean of 24.0 ppb.

TABLE 1 - HIGHLIGHTS OF CONTINUOUS MONITORING 1988

	SO_2	SP	TRS	CO	THC	NO_2	NO	O_3
LOWEST MEAN								
Location	Thunder Bay (63200)	Thunder Bay (63200)	Thunder Bay (63200)	Sarnia (14064) North Bay (75010)	Nanticoke (22907)	Dorset (49010)	Dorset (49010)	North York (34002)
Concentration	0 ppm	.03 units	0.2 ppb	0.3 ppm	1.61 ppm	.002 ppm	.001 ppm	9.0 ppb
HIGHEST MEAN								
Location	Thorold (27052)	Toronto (31049)	Cornwall (56071)	Toronto (31049)	Etobicoke (35003)	Etobicoke (35033)	Toronto (31049)	Long Point (22901)
Concentration	.021 ppm	.63 units	6.8 ppb	2.8 ppm	2.27 ppm	.033 ppm	.071 ppm	38.3 ppb
MOST CRITERION EXCEEDANCES-1 HR								
Location	Copper Cliff (77218)	N/A	Fort Frances (62030)	-	N/A	-	N/A	Long Point (22901)
Number	6	N/A	552*	0	N/A	0	N/A	566
MOST CRITERION EXCEEDANCES-24 HRS								
Location	Copper Cliff (77218)	Toronto (31049)	N/A	N/A	N/A	-	N/A	N/A
Number	6	26	N/A	N/A	N/A	0	N/A	N/A
NUMBER OF STATIONS EXCEEDING 1-HR AQC								
Number	17	N/A	18	0	N/A	0	N/A	46
NUMBER OF STATIONS EXCEEDING 24-HR AQC								
Number	7	27	N/A	N/A	N/A	0	N/A	N/A
HIGHEST MEASURED VALUE-1 HR								
Location	Copper Cliff (77218)	Niagara Falls (27055)	Fort Frances (62030)	Toronto (31049)	Etobicoke (35003)	Toronto (31104)	Kitchener (26029)	Toronto (31190)
Concentration	1.240 ppm	5.0 units	268 ppb	22 ppm	12.9 ppm	0.200 ppm	.099 ppm	196 ppb
TOTAL NUMBER OF STATIONS								
Number	77	47	28	29	17	36	36	48

*exceedances of pulp mill criterion

Figure 1

10-Year Trend in Continuous Pollutants SO_2, SP, CO, TRS

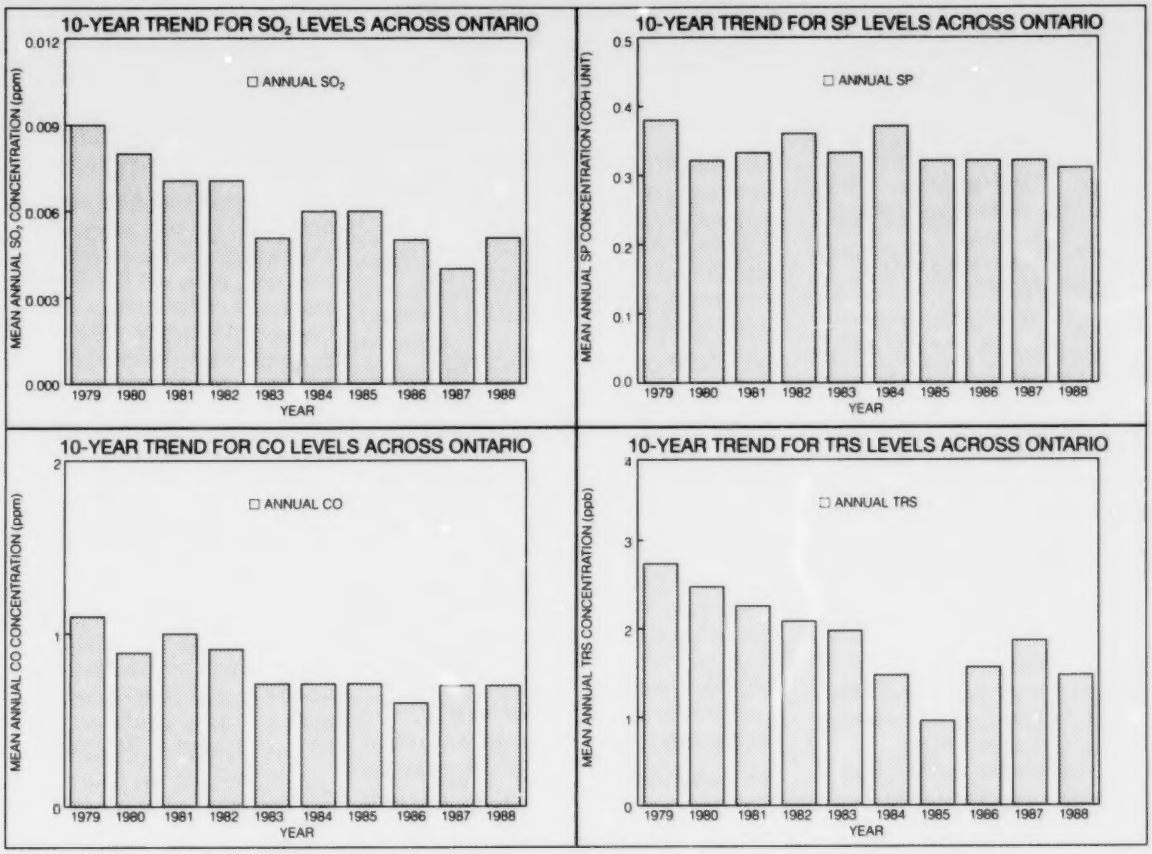
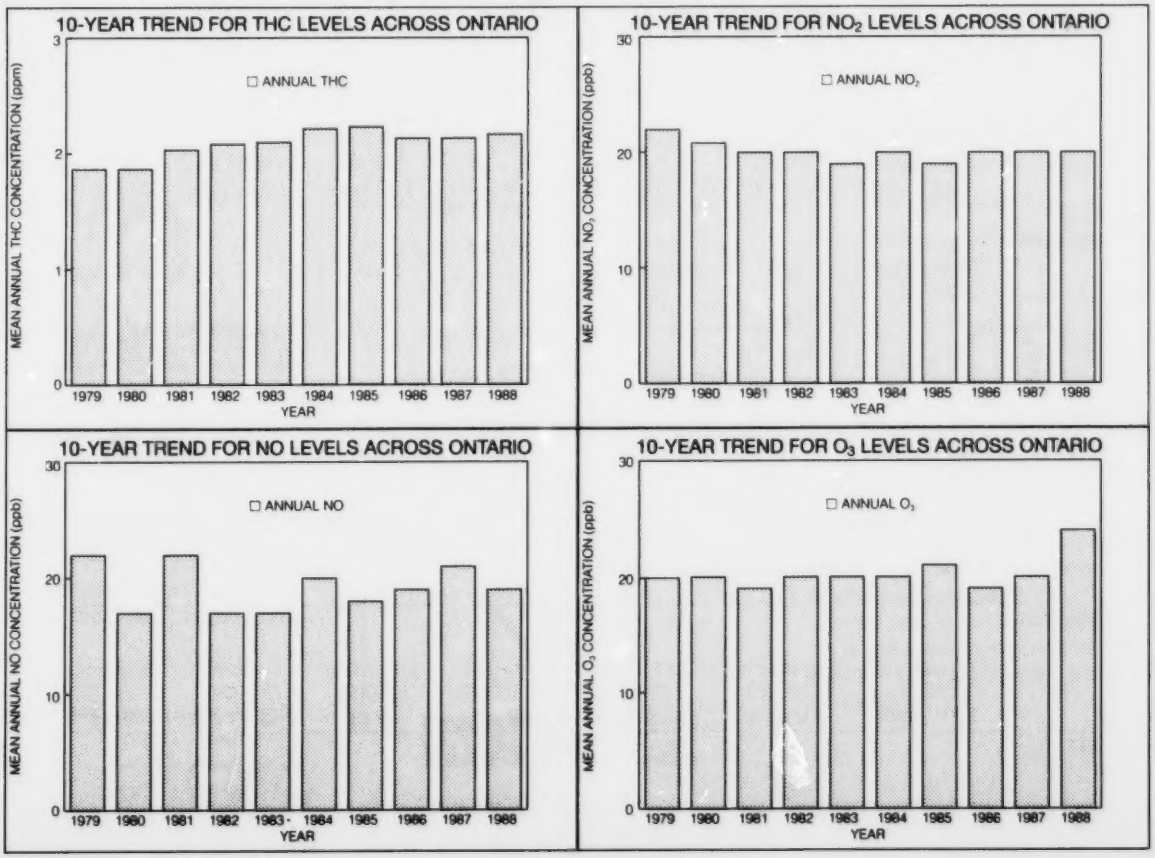


Figure 2

10-Year Trend in Continuous Pollutants THC, NO_2, NO, O_3



SECTION B
THE ONTARIO AIR QUALITY INDEX

10.1 Characteristics

The Air Quality Index (AQI) is a real-time information system that provides the public with an indication of air quality in 26 major cities across Ontario. The system has been in operation since June 1988. The AQI is derived from the sub-indices which are calculated for the pollutants that have evidence of adverse effects on the environment. These pollutants are sulphur dioxide, ozone, nitrogen dioxide, total reduced sulphur, carbon monoxide and suspended particles. In addition, the API (Section 11.0) is also included as one of the AQI sub-indices. The AQI is provided to the public eight times daily and it is increased to hourly releases when the index reaches 32; the level at which air quality is deemed moderate.

10.2 Effect

The AQI sub-index is calculated on a hourly basis for each pollutant. The sub-index increases as the air quality deteriorates. The index values, the corresponding categories and the health and environmental effects are given in Table 2. The highest sub-index at the given time becomes the AQI.

If the index value reaches 50 - 99, the air quality may have adverse effect on the sensitive human population or animal, or may cause significant damage to vegetation, property, or aesthetic value. An AQI value of 100 or greater will cause adverse effect to the health of a large sector of the exposed population.

10.3 Operation of the System

There are 33 AQI monitoring sites in Ontario. The larger cities have more than one AQI station (See Map 3 in Appendix). The cities are selected according to population and previous air quality history. The data from the 33 AQI stations are accessed on a real-time basis by the computer center at the Air Resources Branch. The computed AQIs are released to the public, and the news media 8 times daily. In addition, AQI forecasts based on the meteorological conditions are issued four times daily. In the event that one of the AQI stations has an index greater than 31, the AQI information will be released hourly until it drops below 32.

10.4 Air Quality Index Levels (June - December 1988)

Frequency distribution of the hourly AQI according to descriptive category, and according to the pollutant responsible for AQI≥32 is shown for the thirty-three monitoring locations across Ontario in Table 3. In general, good to very good air quality levels prevailed at all sites throughout the province (94% of the time or better). There were no occurrences of Very Poor air quality reported at any locations. Also evident from the table, ozone is by far the most frequent cause of high index readings in Ontario.

11.0 Air Pollution Index

11.1 Characteristics

The API continues to be the basis of an alert and control system to warn of deteriorating air quality and is derived from 24-hour running averages of sulphur dioxide and suspended particles. Research studies have linked respiratory illness to high concentrations of sulphur dioxide and particulates.

11.2 Legislation

The Ontario Environmental Protection Act (1971) authorizes the Minister of the Environment to order any source not essential to public health or safety to curtail or cease its operations when air pollution levels which may be injurious to health occur.

11.3 Operation of the System

The API is computed each hour based on the past 24 hourly values for SO_2 and SP. If the index reaches a value of 32 (as for example when SO_2 = 0.1 ppm and SP = 1.0) and if the Duty Meteorologist predicts a continuation of adverse atmospheric conditions for at least six hours, an Air Pollution Advisory is issued. Owners of significant sources of pollution are advised to prepare for possible curtailment of operations.

If the index reaches 50, and if at least six hours of adverse atmospheric conditions are forecast, owners of major sources may be ordered to curtail operations. This is called the First Alert Level.

A Second Alert is issued at an API of 75, and further curtailment may be ordered.

The Air Pollution Episode Threshold Level occurs at an API of 100. If atmospheric conditions are not expected to improve for at least six hours, owners of all sources not essential to public health or safety may be ordered to cease operations.

11.4 Air Pollution Index Levels (1979 - 1988)

A history of the Air Pollution Index levels over the last ten years of its operation is provided in Table 4.

TABLE 2 - AIR QUALITY INDEX POLLUTANTS AND THEIR IMPACT

INDEX	CATEGORY	CARBON MONOXIDE CO	NITROGEN DIOXIDE NO_2	OZONE O_3	SULPHUR DIOXIDE SO_2	SUSPENDED PARTICLES SP	SO_2+SP (AS MEASURED BY THE API	TOTAL REDUCED SULPHUR TRS
100-over	Very poor	Increasing cardiovascular symptoms in non smokers with heart disease some visual impairment	Increasing sensitivity of patients with asthma and bronchitis	Light exercise produces respiratory effects in patients with chronic pulmonary disease	Increasing sensitivity in patients with asthma and bronchitis	Increasing sensitivity in patients with asthma and bronchitis	Significant respiratory effects in patients with asthma and bronchitis	Sensitive Individuals may suffer nausea and headaches due to severe odour
50-99	Poor	Increasing cardiovascular symptoms in smokers with heart disease	Odour and discoloration. Some increase in bronchial reactivity in asthmatics	Decreasing performance by athletes exercising heavily	Odourous increasing vegetation damage	Visibility decreased soiling evident	Increased symptoms in patients with chronic respiratory disease	Extremely odourous
32-49	Moderate	Blood chemistry but no detectable impairment	Odourous	Injurious to many vegetation species eg. white beans tomatoes, etc.	Injurious to some species of vegetation	Some decrease in visibility	Injurious to vegetation due to sulphur dioxide	Odourous
16-31	Good	No effects	Slight odour	Injurious to some vegetation species in combination with SO_2 (4 hrs)	Injurious to some vegetation species in combination with ozone (4 hrs)	No effects	No effects	Slight odours
0-15	Very good	No effects	No effects	No effects	No effects	No effects	No effects	No effects

TABLE 3 - AIR QUALITY INDEX SUMMARY - JUNE TO DECEMBER 1988

		Number of Hours AQI in Range					Number of Hours Pollutant Responsible for AQI≥32						
STATION ID	CITY NAME	V. GOOD 0-15	GOOD 16-31	MODERATE 32-50	POOR 51-99	V. POOR 100+	SO_2	SP	O_3	TRS	CO	API	NO_2
44008	BURLINGTON	3968	1102	63	3	0	0	35	31	-	0	0	0
56051	CORNWALL	4331	612	167	26	0	0	8	66	119	0	0	0
32010	EAST YORK	4381	586	55	0	0	0	28	27	-	0	0	0
35003	ETOBICOKE-NORTH	3323	1157	228	8	0	0	90	137	-	0	13	0
35033	ETOBICOKE-SOUTH	3830	1196	106	4	0	0	49	53	-	0	0	0
28028	GUELPH	4588	419	107	0	0	0	0	107	-	0	0	0
29000	HAMILTON-DOWNTOWN	3864	1041	238	10	0	0	65	138	5	0	40	0
29105	HAMILTON-EAST	4460	529	109	2	0	0	12	99	-	0	0	0
29114	HAMILTON-MOUNTAIN	4412	548	142	5	0	0	0	135	12	0	0	0
29118	HAMILTON-WEST	3999	901	186	6	0	0	28	164	-	0	0	0
26029	KITCHENER	4215	705	207	2	0	0	62	147	-	0	0	0
52020	KINGSTON	4902	133	80	5	0	0	0	85	-	0	0	0
15001	LONDON	4268	708	153	7	0	0	5	155	-	0	0	0
46110	MISSISSAUGA	4472	534	124	6	0	0	22	108	-	0	0	0
27056	NIAGARA FALLS	4140	770	194	12	0	0	0	206	-	0	0	0
34020	NORTH YORK-CENTRAL	4224	755	143	14	0	0	7	150	-	0	0	0
34025	NORTH YORK-WEST	4449	586	97	1	0	0	14	84	-	0	0	0
75010	NORTH BAY	4392	526	102	0	0	0	0	102	-	0	0	0
44015	OAKVILLE	4132	858	136	10	0	0	24	119	3	0	0	0
45025	OSHAWA	4320	684	126	6	0	0	13	120	-	0	0	0
51001	OTTAWA	4642	432	57	4	0	0	5	56	-	0	0	0
14064	SARNIA	4406	624	104	2	0	0	4	101	1	0	0	0
71068	SAULT-STE-MARIE	4603	443	37	0	0	0	13	12	12	0	0	0
33003	SCARBOROUGH	4284	745	102	5	0	0	11	96	-	0	0	0
27067	ST CATHARINES	4415	606	108	7	0	0	2	113	-	0	0	0
77203	SUDBURY	4430	585	83	12	0	17	0	78	0	0	0	0
63200	THUNDER BAY	4999	136	1	0	0	0	0	0	1	0	0	0
31104	TORONTO-DOWNTOWN	4407	625	98	6	0	0	4	100	-	0	0	0
31120	TORONTO-WEST	4484	502	127	7	0	0	24	110	-	0	0	0
26045	WATERLOO	4620	427	61	1	0	0	0	62	-	0	0	0
12008	WINDSOR-UNIVERSITY	3340	1560	216	17	0	0	46	187	-	0	0	0
12016	WINDSOR-COLLEGE	3877	967	289	21	0	0	19	206	85	0	0	0
36030	YORK	4003	931	190	12	0	0	58	144	-	0	0	0

TABLE 4
TEN-YEAR HISTORY OF THE AIR POLLUTION INDEX (1979-1988)

YEAR	CITY	NUMBER OCCASIONS ≥32	NUMBER OCCASIONS ≥50	MAXIMUM INDEX	DATE OF MAXIMUM
1979	TORONTO	2	0	35	Oct. 18
	HAMILTON	23	1	55	Dec. 22
	SUDBURY	0	0	18	July 7
	WINDSOR (12008)	0	0	31	Feb. 20
	WINDSOR (12016)	0	0	27	Feb. 21
	NIAGARA FALLS	0	0	27	Feb. 21
	CONISTON	0	0	31	Feb. 14
	NEW SUDBURY	0	0	28	Feb. 14
	SARNIA	2	0	43	Feb. 20
	ST. CATHARINES	0	0	29	Nov. 6
1980	TORONTO	0	0	31	Dec. 8
	HAMILTON	5	0	40	Oct. 16
	SUDBURY	0	0	23	Oct. 16
	WINDSOR (12008)	0	0	25	Feb. 8, 9
	WINDSOR (12016)	0	0	25	Dec. 29
	NIAGARA FALLS	0	0	18	May 24
	CONISTON	0	0	30	Feb. 10, Mar. 9
	NEW SUDBURY	0	0	24	Jul. 3, Oct. 16
	SARNIA	1	0	39	Mar. 20
	ST. CATHARINES	0	0	28	Feb. 20
1981	TORONTO	3	0	43	Nov. 14
	HAMILTON	8	0	38	Nov. 15
	SUDBURY	0	0	21	Jan. 31
	WINDSOR (12008)	1	0	42	Nov. 17
	WINDSOR (12016)	0	0	31	Nov. 17
	NIAGARA FALLS	0	0	25	Jan. 14
	CONISTON	0	0	20	Nov. 25
	NEW SUDBURY	0	0	22	Jan. 28-29
	SARNIA	1	0	34	Feb. 16
	ST. CATHARINES	0	0	27	Jan. 14-15
1982	TORONTO	3	2	54	Oct. 27
	HAMILTON	12	0	39	Dec. 2
	SUDBURY	0	0	15	Feb. 3
	WINDSOR (12008)	0	0	31	Oct. 26-27
	WINDSOR (12016)	1	0	35	Oct. 27
	NIAGARA FALLS	0	0	19	Jan. 19
	CONISTON	1	0	39	Feb. 5
	NEW SUDBURY	0	0	29	Feb. 5
	SARNIA	0	0	27	Mar. 11, Nov.7-8
	ST. CATHARINES	0	0	31	Nov. 18
1983	TORONTO	3	0	39	Jan. 29
	HAMILTON	1	0	37	Mar. 2
	SUDBURY	1	0	39	Jan. 22
	WINDSOR (12008)	0	0	26	Sep. 27
	WINDSOR (12016)	1	0	33	Mar. 1-2
	NIAGARA FALLS	0	0	17	Jan. 30
	CONISTON	0	0	19	Jan. 15
	NEW SUDBURY	1	1	63	Jan. 22
	SARNIA	0	0	28	Jan. 29
	ST. CATHARINES	0	0	23	Jan. 30
1984	TORONTO	2	1	50	Jan. 16
	HAMILTON	8	0	44	Nov. 27
	SUDBURY	0	0	23	Feb. 1
	WINDSOR (12008)	0	0	31	Oct. 2, Nov. 14
	WINDSOR (12016)	1	0	40	Feb. 15
	NIAGARA FALLS	0	0	20	Dec. 10-11
	CONISTON	0	0	29	Nov. 22
	NEW SUDBURY	0	0	23	Nov. 22
	SARNIA	0	0	27	Jan. 23
	ST. CATHARINES	0	0	24	Feb. 10-11

TABLE 4 (CONT.)
TEN-YEAR HISTORY OF THE AIR POLLUTION INDEX (1979-1988)

YEAR	CITY	NUMBER OCCASIONS ≥32	NUMBER OCCASIONS ≥50	MAXIMUM INDEX	DATE OF MAXIMUM
1985	TORONTO	0	0	25	Apr. 23
	HAMILTON	2	0	36	Apr. 23-24
	SUDBURY	0	0	31	Aug. 4
	WINDSOR (12008)	0	0	25	Dec. 20
	WINDSOR (12016)	0	0	30	Dec. 20
	NIAGARA FALLS	0	0	19	Apr. 24
	CONISTON	0	0	19	Mar. 26
	NEW SUDBURY	0	0	31	Jan. 7
	SARNIA	0	0	20	Mar. 27-28
	ST. CATHARINES	0	0	18	Dec. 6
1986	TORONTO	0	0	22	Jan. 17
	HAMILTON	5	0	37	May 15
	SUDBURY	0	0	23	Oct. 26
	WINDSOR (12008)	0	0	31	Jan. 16, Oct. 22, 7 Dec. 16
	WINDSOR (12016)	0	0	29	Mar. 14
	NIAGARA FALLS	0	0	17	Jan. 17
	CONISTON	0	0	18	Mar. 20-21
	NEW SUDBURY	0	0	20	Apr. 23
	SARNIA	0	0	29	Dec. 17
	ST. CATHARINES	0	0	18	Jan. 17
1987	TORONTO	0	0	31	Oct. 16
	HAMILTON	2	0	38	Oct. 17
	SUDBURY	0	0	26	Mar. 14
	WINDSOR (12008)	0	0	24	Apr. 10
	WINDSOR (12016)	0	0	20	Jun. 25; Oct. 24
	NIAGARA FALLS	0	0	16	Oct. 16-17
	CONISTON	0	0	23	Mar. 9; Mar. 11
	NEW SUDBURY	0	0	22	Mar. 11; Mar. 14; 7 Aug. 27
	SARNIA	0	0	24	Jan. 28
	ST. CATHARINES	0	0	24	Oct. 16-17
1988	TORONTO DOWNTOWN	0	0	22	Jul. 7
	HAMILTON DOWNTOWN	1	0	43	Nov. 25-26
	SUDBURY	0	0	25	Jun. 17-18
	WINDSOR (12008)	0	0	28	Nov. 23; Dec.7
	WINDSOR (12016)	0	0	24	Jan. 8-9
	NIAGARA FALLS	0	0	20	Nov. 26
	& CONISTON	0	0	21	Apr. 19
	& NEW SUDBURY	0	0	21	Jun. 15
	SARNIA	0	0	26	Jan. 30
	ST. CATHARINES	0	0	24	Jul. 21
	* TORONTO WEST	0	0	13	Dec. 13
	* EAST YORK	0	0	22	Nov. 4
	* SCARBOROUGH	0	0	29	Sep. 30
	* NORTH YORK CENTRAL	0	0	23	Nov. 26
	* NORTH YORK WEST	0	0	27	Nov. 26
	* ETOBICOKE WEST	1	0	33	Nov. 26
	* ETOBICOKE SOUTH	0	0	29	Nov. 26
	* YORK	0	0	29	Nov. 26
	* BURLINGTON	0	0	27	Sep. 8-9
	* OAKVILLE	0	0	24	Sep. 2
	* OSHAWA	0	0	23	Jun. 15;Jul.7
	* MISSISSAUGA	0	0	18	Jul. 19; Aug.5
	* LONDON	0	0	22	Nov. 26
	* KITCHENER	0	0	26	Aug. 2
	* WATERLOO	0	0	17	Nov. 25-26
	* GUELPH	0	0	18	Nov. 26
	* HAMILTON EAST	0	0	20	Nov. 26
	* HAMILTON MOUNTAIN	0	0	23	Nov. 26
	* HAMILTON WEST	0	0	26	Nov. 25-26
	* SAULT STE MARIE	0	0	24	Jun. 20
	* NORTH BAY	0	0	16	Nov. 26
	* OTTAWA	0	0	18	Aug. 5: Dec.19-20
	* CORNWALL	0	0	20	Jun. 7
	* THUNDER BAY	0	0	5	Nov. 24-25

* started June, 1988
& closed May, 1988

SECTION C POLLUTANTS MEASURED BY HIGH VOLUME SAMPLER MONITORING (DAILY DATA)

TSP

TOTAL SUSPENDED PARTICULATE

11.1 Characteristics

Total suspended particulate is a generic term for airborne particles including smoke, fume, dust, fly ash and pollen. Composition varies with place and season but normally includes soil particulates, organic matter, sulphur and nitrogen compounds and metals such as lead. Size range is approximately .1 to 100 microns (diameter).

11.2 Effects

The greatest impact on health is from particles less than 10 microns in diameter which can penetrate deep into the lungs and contribute to respiratory disease. More serious health effects may be associated with suspended particulate matter which contains a toxic particulate component or which has absorbed a gaseous pollutant on the surface of the particles. Corrosion, soiling, damage to vegetation and visibility reduction are additional effects.

11.3 Ontario Criteria

120 µg/m³ (24 hours)
60 µg/m³ (1 year - geometric mean)

11.4 Sources

Natural sources include wind-blown soil, forest fires and plant pollen. Anthropogenic sources include combustion, incineration, construction, mining, metals smelting and processing, grinding processes, agricultural activity and transportation.

11.5 Method of Monitoring

By High Volume Sampler. Air is drawn through a filter at the rate of approximately 1.4 m³/min. The (daily) mass concentration of total suspended particulate matter is computed from the mass of collected particles and the volume of air sampled.

11.6 Location and Frequency of Monitoring

The monitoring locations and the frequency of sampling at each location are indicated in the Appendix (Table A-3).

TSP was measured at 152 locations in 1988.

11.7 Monitoring Results

The distribution by percentile; the maximum; the arithmetic and geometric means are given in the Appendix (Table A-23). Also given are the number of exceedances of the 24-hour and one-year criteria.

11.7 Monitoring Results (cont'd)

The lowest levels measured in the province were at Dorset where the annual mean was 11 µg/m³.

The greatest percentage of exceedances of the 24-hour criterion occurred at Thorold and the highest annual mean was measured there also.

There were a total of 119 stations which exceeded the 24-hour criterion and 37 which exceeded the one-year criterion. (See also Table 5.)

11.8 Ten-Year Trend

The trend in mean annual TSP at locations which possess a ten-year record is shown in Table A-24 and is summarized for the province in Figure 3. Particulate levels have improved since 1979 by about 25%.

Pb

LEAD IN SUSPENDED PARTICULATE

12.1 Characteristics

A silver bluish, white, soft metal. Molecular weight 207.20.

12.2 Effects

Can degrade renal function, impair hemoglobin synthesis, and alter the nervous system.

12.3 Ontario Criteria

5.0 µg/m³ (24 hours)
2.0 µg/m³ (30 day - geometric mean)

12.4 Sources

Combustion of gasoline containing lead additives, secondary smelting of lead, battery manufacture, metal fabrication, some paint and glass manufacture, production of iron, steel, copper and nickel.

Lead emissions fell significantly after 1975 with the introduction of lead-free gasoline.

12.5 Method of Monitoring

Lead concentration on high volume filters determined by either X-Ray fluorescence or atomic absorption.

12.6 Location and Frequency of Monitoring

The monitoring locations and sampling frequency for each location are indicated in the Appendix (Table A-3).

Lead was measured at 79 locations in 1988.

12.7 Monitoring Results

The distribution by percentile; the maximum; the arithmetic and geometric means are given in the Appendix (Table A-25). Also given are the number of exceedances of the 24-hour criterion.

The greatest percentage of exceedances of the 24-hour criterion occurred at Mississauga (2414 Dixie Road) in the vicinity of a lead processing plant. The highest annual mean and the highest measured value also occurred there.

There were a total of five stations which exceeded the daily criterion at least once. (See also Table 5.)

12.8 Ten-Year Trend

Lead levels in air have improved very significantly over the past ten years (see Figure 3).

The trend at selected Ontario cities is shown in Table A-26; the decline is largely due to the decreased use of leaded gasoline.

TRACE METALS

CADMIUM, CHROMIUM, COPPER, IRON, MANGANESE, NICKEL, VANADIUM

13.1 Characteristics

Name	Symbol	Properties	Molecular Weight
Cadmium	Cd	silver white, hexagonal	112.41
Chromium	Cr	steel grey, cubic	52.00
Copper	Cu	red, cubic	63.55
Iron	Fe	silver, cubic	58.85
Manganese	Mn	grey-pink, cubic	54.94
Nickel	Ni	silver, cubic	58.60
Vanadium	V	light grey, cubic	50.94

13.2 Effects

Depth of penetration into the respiratory system (and consequently risk to health) increase as particle size decreases. Of the heavy metals, cadmium, chromium and vanadium probably pose the greatest risk to human health. Soiling and damage to vegetation are additional effects.

13.3 Ontario Criteria

	24 Hour Criterion	
Cadmium	2	$\mu g/m^3$
Chromium	1.5	$\mu g/m^3$
Copper	50	$\mu g/m^3$
Manganese	10	$\mu g/m^3$
Nickel	2	$\mu g/m^3$
Vanadium	2	$\mu g/m^3$

13.4 Sources

See Section 1.4.

13.5 Method of Monitoring

Collection is by High Volume Sampler (see Section 11.5). Following determination of TSP, a portion is cut from the exposed filter and ashed to destroy carbonaceous matter. The ashed sample is then digested in acid, and analyzed by atomic absorption spectrophotometry. The mass concentration of each metal in ambient air is calculated from the mass of each metal in TSP and the volume of air sampled, and expressed in $\mu g/m^3$.

13.6 Location and Frequency of Sampling

The monitoring locations and the sampling frequency for each location are indicated in the Appendix (Table A-3).

Metals were measured at 52 to 58 stations depending on the element.

13.7 Monitoring Results

The distribution by percentile of the daily data; the maximum; the arithmetic mean; the geometric mean; and the number of exceedances of the daily criterion are provided in the Appendix for Copper, Iron, Manganese, Nickel, Chromium, Cadmium and Vanadium. Table A-36 shows the maximum monitored levels for all the trace metals listed above.

Table 5 provides the highlights of Particulate Monitoring for 1988. It shows that three exceedances of the air quality criteria for metals (exclusive of lead) occurred in 1988. Two exceedances occurred at Copper Cliff and the other exceedance occurred at Port Colborne. The metal responsible was nickel. Such exceedances may be harmful to vegetation.

13.8 Ten-Year Trend

The trend in mean annual Copper and Iron is shown in Tables A-28 and A-30, respectively, and is summarized for Ontario in Figure 3. Copper has declined by 60% while Iron has remained relatively constant over the past ten years.

NO_3^-

NITRATE

14.1 Characteristics

Nitrogen oxide compounds, formed from atmospheric nitrogen and oxygen through high temperature combustion, photochemical reactions or bacterial action, may react with other compounds in the air to form nitrate (NO_3^-) or nitric acid (HNO_3).

14.2 Effects

Nitrate and nitric acid are involved in corrosion of materials, visibility degradation and acidic precipitation. They may also have an adverse effect on human health.

14.3 Ontario Criteria

None

14.4 Sources

Nitrate is primarily a secondary pollutant. Anthropogenic sources of nitrogen oxides or nitrates include all high temperature combustion processes, transportation, and fertilizer production and usage. Natural sources include lightning, biological decomposition and photochemical reactions.

14.5 Method of Monitoring

Nitrates collected on glass fibre filters by a High Volume Sampler are extracted by digestion in distilled water. This extract is reduced to nitrite followed by colourimetric analysis for determination of the mass concentration of atmospheric nitrate.

14.6 Location and Frequency of Monitoring

The monitoring locations and the length of the sampling cycle (in days) for each location are indicated in the Appendix (Table A-3).

Nitrate monitoring was carried out at 58 locations in 1988.

14.7 Monitoring Results

The distribution by percentile; the maximum; the arithmetic mean; and the geometric mean are given in the Appendix (Table A-37). Highlights of monitoring are summarized in Table 5.

The highest annual mean nitrate concentration occurred at Windsor (City Hall) and the highest concentration for a single day occurred at the Windsor (University Avenue) monitor.

14.8 Ten-Year Trend

The trend in mean annual NO_3^- at locations which possess a ten-year record is shown in Table A-38 and is summarized for the province in Figure 4.

Since nitrate is primarily the result of medium and long range transport of air pollution, its variability is largely related to meteorological variability.

SO_4^{2-}

SULPHATE

15.1 Characteristics

Sulphur dioxide is oxidized in the atmosphere to eventually form sulphate compounds. Intermediaries in the oxidation process such as HSO_3 and SO_3 rapidly combine with water vapour to form sulfuric acid aerosol. This type of process is dependent on atmospheric conditions.

15.2 Effects

Sulphate compounds have been linked to respiratory irritation and disease, corrosion of materials, reduction of visibility and the formation of acidic precipitation.

15.3 Ontario Criteria

None.

15.4 Sources

Sulphate is primarily a secondary pollutant. Anthropogenic sources of sulphur oxides include the burning of fuels containing sulphur (such as coal and oil), the smelting of sulphur-containing ores and the refining of petroleum. Natural sources include bacterial decomposition, volcanoes and forest fires.

15.5 Method of Monitoring

Sulphate collected on glass fibre filters by a High Volume Sampler is extracted by digestion in distilled water. This extract is analyzed colourimetrically and the mass concentration of sulphate is calculated. It has been found that artifact sulphates form on the glass fibre filters from ambient SO_2 and that reported sulphate concentrations are therefore artificially high. No attempt has been made to correct the data reported here.

15.6 Location and Frequency of Monitoring

The monitoring locations and the length of the sampling cycle (in days) for each location are indicated in the Appendix (Table A-3).

Sulphate monitoring was carried out at 58 locations in 1988.

15.7 Monitoring Results

The distribution by percentile; the maximum; the arithmetic mean; and the geometric mean are given in the Appendix (Table A-39). Highlights of monitoring are summarized in Table 5.

The highest annual mean sulphate concentration was measured at Hamilton (Vickers/East 18th), and the highest concentration for a single day occurred at Oshawa.

15.8 Ten-Year Trend

The variability of the annual means for sulphate (see Figure 4 and Table A-40) may be explained by meteorological variability as in the case of nitrate (Section 14.8).

TABLE 5- HIGHLIGHTS OF PARTICULATE MONITORING 1988

	TSP	Pb	Cu	Fe	Mn	Ni	NO_3^-	SO_4^{2-}
LOWEST MEAN								
Location	Dorset (49010)	Several	Several	Several	Mooretown (14031)	Several	Sudbury (77016) (77026)	Thunder Bay (63005)
Concentration	11 µg/m³	0.1 µg/m³	0.01 µg/m³	0.3 µg/m³	.011 µg/m³	.005 µg/m³	0.8 µg/m³	3.2 µg/m³
HIGHEST GEOM MEAN								
Location	Thorold (27052)	Mississauga (46041)	Sudbury (77016)	Hamilton (29011)	Hamilton (29011)	Copper Cliff (77070)	Windsor (12002)	Hamilton (29114)
Concentration	114 µg/m³	2.0 µg/m³	0.23 µg/m³	5.4 µg/m³	.377 µg/m³	.193 µ/m³	4.1 µg/m³	11.3 µg/m³
PERCENTAGE OF SAMPLES ABOVE 24-HR AQC								
Location	Thorold (27052)	Mississauga (46041)				Copper Cliff (77070)		
Number	45	19	0	N/A	0	1	N/A	N/A
NUMBER OF STATIONS EXCEEDING 24-HR AQC								
Number	119	5	0	N/A	0	2	N/A	N/A
NUMBER OF STATIONS EXCEEDING 1 YR AQC								
Number	37	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HIGHEST MEASURED VALUE-24 HRS								
Location	Hearst (72080)	Mississauga (46041)	Copper Cliff (77070)	S.S. Marie (71042)	Hamilton (29025)	Copper Cliff (77070)	Windsor (12008)	Oshawa (45025)
Concentration	710 µg/m³	34.3 µg/m³	1.62 µg/m³	64.7 µg/m³	3.830 µg/m³	6.140 µg/m³	18.1 µg/m³	50.9 µg/m³
TOTAL NUMBER OF STATIONS								
Number	152	79	52	56	53	53	58	58

Figure 3

10-Year Trend in Particulate Pollutants TSP, Pb, Cu, Fe

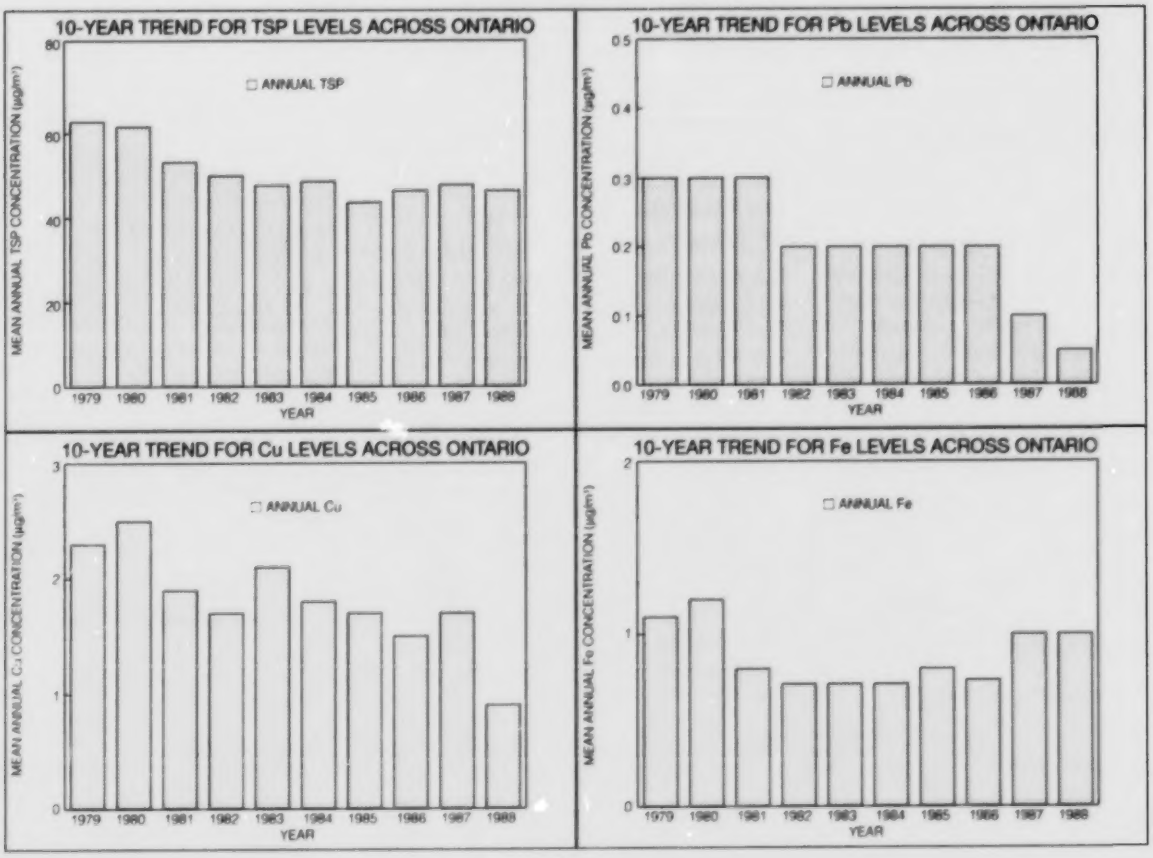
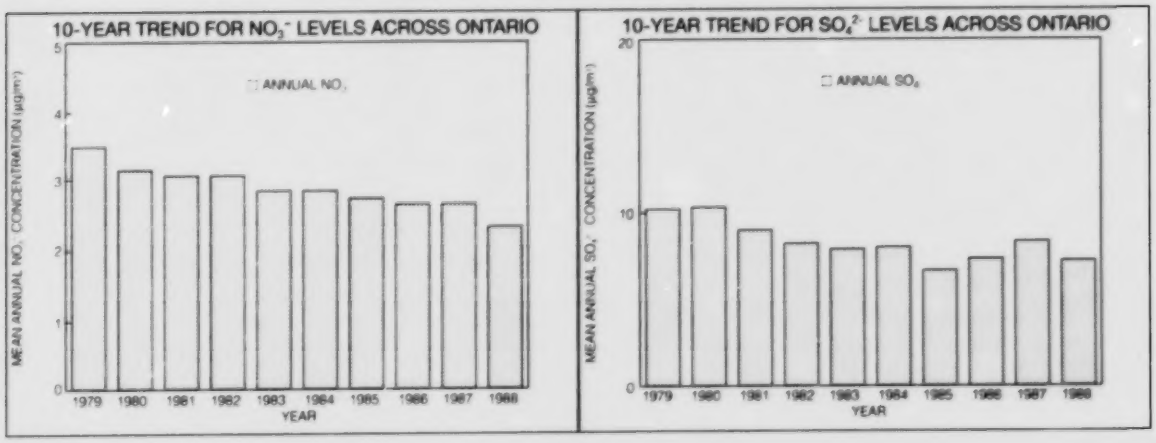


Figure 4

10-Year Trend in Particulate Pollutants NO_3^-,and SO_4^{2-}



APPENDIX

Air Quality in Ontario 1988

Environment
Environnement

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APPENDIX
AIR QUALITY IN ONTARIO
1988

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INTRODUCTION

This Appendix is intended for use in conjunction with the Annual Report Air Quality in Ontario 1988.

For each pollutant, tables provide the location of stations and supply sample distribution information including means, maxima and the number of exceedances of the Ontario criteria.

The entire continuous (hourly) network is summarized in Appendix Table A-1 and Maps 1 and 2. The table gives station name, numerical identifier, and pollutants measured. Letter codes indicate whether data are telemetered (T) or chart-read (C). The column headings for pollutants are as follows:

SO_2	sulphur dioxide
SP	suspended particles
CO	carbon monoxide
O_3	ozone
NO_2	nitrogen dioxide
NO	nitric oxide
NO_X	total nitrogen oxides
THC	total hydrocarbons
RHC	reactive (non-methane) hydrocarbons
TRS	total reduced sulphur
API	air pollution index
AQI	air quality index

Table A-2 gives detailed locations for the continuous monitoring network.

The Air Quality Index sites are shown in Map 3.

The particulate (daily) network is summarized in Appendix Table A-3 and Maps 4 and 5. The table gives station name, numerical identifier, and pollutants measured. Numerals indicate the monitoring cycle frequency in days. Some additional codes are defined in the key at the top of the table. The column headings for pollutants are as follows:

TSP	total suspended particulate
Cd	cadmium
Cr	chromium
Cu	copper
Fe	iron
Mn	manganese
Ni	nickel
Pb	lead
V	vanadium
NO_3^-	nitrate
SO_4^{2-}	sulphate

Table A-4 gives detailed locations for the daily monitoring network. The statistical data and the 10-year trends for the various pollutants are provided in Tables A-5 through A-40.

ABBREVIATIONS

INS – insufficient data to compute relevant statistic.
YR – year that monitoring began.
TYP – survey type

TABLE A-1 THE CONTINUOUS (HOURLY) NETWORK (1988)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
HURON PARK	10001	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
WINDSOR- WRIGHT	12007	A	84	T	.	.	.	.	.	.	.	.	.	T	.	.
WINDSOR- UNIVERSITY	12008	A	69	T	T	T	T	T	T	T	T	T	T	.	T	T
WINDSOR- WYANDOTTE	12013	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- COLLEGE	12016	A	75	T	T	.	T	.	.	.	.	.	.	T	T	T
WINDSOR- HOWARD	12038	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- DOUGALL	12039	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- DARWIN	12047	I	84	T	.	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- MALDEN	12048	A	84	T	.	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- ALEXANDRINE	12049	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
MERLIN	13021	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
COURTRIGHT- HWY 40	14016	A	69	T	.	.	.	.	.	.	.	.	.	.	.	.
SARNIA- CENTENNIAL	14064	A	76	T	T	T	T	T	T	T	T	.	.	T	T	T
MANDALMIN	14118	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
LONDON- FAIR GROUNDS	15001	A	70	T	T	T	T	T	T	T	T	.	.	.	T	T
LONGWOODS	15009	A	83	.	T	.	.	.	.	.	.	.	.	.	.	.
PARKHILL	15013	A	83	.	.	.	T	T	T	T	.	.	.	.	.	.
LONDON	15015	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
LONDON	15016	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
LONDON	15017	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
TIVERTON- CON RD 2	18007	A	79	T	.	.	T	.	.	.	.	.	.	T	.	.
SIMCOE	22071	A	75	T	.	.	T	T	T	T	T	T	T	.	.	.
NANTICOKE- CHEAPSIDE	22086	I	77	T	.	.	.	T	T	T	.	.	.	T	.	.
TOWNSEND	22094	I	86	T	.	.	.	.	.	.	.	.	.	.	.	.
LONG POINT	22901	A	79	T	.	.	T	T	T	T	.	.	.	.	.	.
NANTICOKE- WALPOLE	22904	I	79	.	.	.	.	.	.	.	T	T	T	T	.	.
NANTICOKE- RAINHAM	22907	I	84	T	T	.	.	.	.	.	T	T	T	T	.	.
KITCHENER	26029	A	76	T	T	T	T	T	T	T	.	.	.	.	T	T
WATERLOO	26045	A	88	T	T	.	T	.	.	.	.	.	.	.	T	T
THOROLD- NIAGARA	27042	I	78	T	.	.	.	.	.	.	.	.	.	.	.	.
CHIPPAWA- NORTON	27051	I	79	T	.	.	.	.	.	.	.	.	.	.	.	.
THOROLD- QUEEN	27052	I	83	T	T	.	.	.	.	.	.	.	.	T	.	.
NIAGARA F- STANLEY	27055	I	83	T	T	.	.	.	.	.	.	.	.	T	.	.
NIAGARA F- ALLENDALE	27056	A	83	T	T	.	T	.	.	.	.	.	.	.	T	T
ST. CATHARINES	27067	A	87	T	T	T	T	T	T	T	T	.	T	.	T	T
GUELPH- EXHIBITION	28028	A	86	T	T	.	T	.	.	.	.	.	.	.	T	T
HAMILTON- ELGIN	29000	A	87	T	T	T	T	T	T	T	T	T	T	T	T	T
HAMILTON- HUNTER	29001	A	61	.	T	.	.	.	.	.	.	.	.	.	.	.
HAMILTON- BARTON	29025	I	69	T	T	.	.	.	.	.	.	.	.	T	.	.
HAMILTON- BEACH	29102	A	84	T	T	T	.	T	T	T	T	T	T	T	.	.

TABLE A-1 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
HAMILTON- NASH	29105	A	85	T	T	.	T	.	.	.	.	.	.	.	T	T
HAMILTON- VICKERS	29114	A	85	T	T	.	T	.	.	.	.	.	.	T	T	T
HAMILTON- MAIN WEST	29118	A	85	T	T	.	T	T	T	T	.	.	.	.	T	T
TORONTO- MISSION	31049	A	72	.	T	T	.	T	T	T	.	.	.	.	.	.
TORONTO- BREADALBANE	31104	A	81	T	T	T	T	T	T	T	T	.	.	.	T	T
TORONTO- JUNCTION	31120	A	81	T	T	T	T	T	T	T	T	.	.	.	T	T
TORONTO- CN TOWER	31190	A	85	T	T	T	T	T	T	T	.	.	.	.	.	.
EAST YORK- LEASIDE	32010	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
SCARBORO- LAWRENCE	33003	A	70	T	T	T	T	T	T	T	T	.	.	.	T	T
SCARBORO- REDLAND	33019	A	69	T	.	.	.	.	.	.	.	.	.	.	.	.
N YORK- SCIENCE CTR	34002	A	69	T	.	T	T	T	T	T	T	.	.	.	.	.
N YORK- CENTRAL	34020	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
NORTH YORK- WEST	34025	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
ETOBICOKE- ELMCREST	35003	A	69	T	T	T	T	T	T	T	T	.	.	.	T	T
ETOBICOKE- QUEENSWAY	35005	I	68	T	.	.	.	.	.	.	.	.	.	.	.	.
ETOBICOKE- EVANS	35033	A	67	T	T	T	T	T	T	T	T	.	.	.	T	T
ETOBICOKE- MOE LAB	35050	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
YORK	36030	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
BURLINGTON	44008	A	79	T	T	T	T	T	T	T	.	.	.	.	T	T
OAKVILLE	44015	A	80	T	T	T	T	T	T	T	T	.	.	T	T	T
OSHAWA- RITSON	45025	A	79	T	T	T	T	T	T	T	.	.	.	.	T	T
MISSISSAUGA- QUEENSWAY	46110	A	77	T	T	T	T	T	T	T	.	.	.	.	T	T
MISSISSAUGA	46117	I	87	T	.	.	.	.	.	.	T	.	.	T	.	.
ALLISTON	47035	A	81	.	.	.	T	.	.	.	.	.	.	.	.	.
BARRIE	47042	A	83	T	.	.	.	.	.	.	.	.	.	.	.	.
STOUFFVILLE	48002	A	74	T	.	.	T	T	T	T	.	.	.	.	.	.
DORSET	49010	A	81	C	.	.	C	D	C	C	.	.	.	.	.	.
OTTAWA- MCDONALD GDN	51001	A	71	T	T	T	T	T	T	T	.	.	.	.	T	T
KINGSTON	52020	A	88	.	.	.	T	.	.	.	.	.	.	.	T	T
CORNWALL- MEMORIAL P	56051	A	70	T	T	T	T	T	T	T	.	.	.	T	T	T
CORNWALL- 435 W 2ND	56068	I	75	.	.	.	.	.	.	.	.	.	.	T	.	.
CORNWALL	56071	I	84	.	.	.	.	.	.	.	.	.	.	T	.	.
PETERBORO- CITY HALL	59006	A	76	T	.	.	T	.	.	.	.	.	.	.	.	.
BALMERTOWN	61014	I	82	T	.	.	.	.	.	.	.	.	.	.	.	.
DRYDEN	61027	I	84	.	.	.	.	.	.	.	.	.	.	T	.	.
F FRANCES- CHURCH	62030	I	76	.	.	.	.	.	.	.	.	.	.	T	.	.
F FRANCES- COLONIZ'N	62032	I	76	.	.	.	.	.	.	.	.	.	.	T	.	.
THUNDER B- ALGOMA	63022	A	78	T	.	.	.	.	.	.	.	.	.	.	.	.
MARATHON- PENINSULA	63034	I	82	.	.	.	.	.	.	.	.	.	.	T	.	.
THUNDER B- MONTREAL	63046	I	76	.	.	.	.	.	.	.	.	.	.	T	.	.

TABLE A-1 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
RED ROCK	63084	I	81	.	.	.	.	.	.	.	.	.	.	T	.	.
TERRACE BAY	63090	I	81	.	.	.	.	.	.	.	.	.	.	T	.	.
HAWKEYE LAKE	63100	A	83	.	.	.	C	.	.	.	.	.	.	.	.	.
THUNDER B- JAMES ST	63200	A	86	T	T	T	T	T	T	T	.	.	.	T	T	T
S.S.MARIE- WM. S	71068	A	87	T	T	T	T	T	D	T	.	.	.	T	T	T
WAWA- HOSPITAL	71069	A	86	T	.	.	.	.	.	.	.	.	.	.	.	.
WAWA- MOTOR INN	71070	A	86	T	.	.	.	.	.	.	.	.	.	.	.	.
SMOOTH ROCK FALLS	72084	I	86	.	.	.	.	.	.	.	.	.	.	T	.	.
HOYLE/TIMMINS	72089	I	87	T	.	.	.	.	.	.	.	.	.	.	.	.
NORTH BAY	75010	A	79	T	T	T	T	T	D	T	.	.	.	.	T	T
SKEAD	77012	A	52	T	.	.	.	.	.	.	.	.	.	.	.	.
HAMMER	77013	A	73	T	.	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- ASH	77016	A	69	T	T	.	T	.	.	.	.	.	.	.	.	.
CONISTON- GOVERNMENT	77028	A	74	T	T	.	.	.	.	.	.	.	.	.	.	.
GARSON- FALCONBRIDGE	77065	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
NEW SUDBURY- KENNEDY	77075	A	76	T	T	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- LONG LAKE	77096	A	80	T	.	.	.	.	.	.	.	.	.	.	.	.
MIKKOLA	77201	A	82	T	.	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- SCIENCE N	77203	A	84	T	T	T	T	T	D	T	.	.	.	T	T	T
RAYSIDE- ST LAURENT	77206	A	85	T	.	.	.	.	.	.	.	.	.	.	.	.
COPPER CLIFF	77218	I	87	T	.	.	.	.	.	.	.	.	.	.	.	.

TABLE A-2 LOCATIONS OF CONTINUOUS (HOURLY) STATIONS (1988)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
COLLEGE OF AGRIC TECH HURON PARK	10001	A	77	43:17	81:30	5
WRIGHT/WATER ST WINDSOR	12007	A	84	42:17	83:06	4
467 UNIVERSITY AV W WINDSOR	12008	A	69	42:19	83:03	8
FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	12013	A	76	42:19	83:00	6
COLLEGE/SOUTH ST WINDSOR	12016	A	75	42:18	83:04	4
2885 HOWARD AV WINDSOR	12038	I	86	38:41	82:54	1
DOUGALL/E.C. ROW W WINDSOR	12039	I	86	42:17	83:01	5
DORWIN PLAZA, DOUGALL AV WINDSOR	12047	I	84	42:17	83:02	3
MALDEN RD (S LAURIER DR) WINDSOR	12048	A	84	42:13	83:04	3
643 ALEXANDRINE WINDSOR	12049	I	86	42:17	83:01	1
MOE WATER PUMP STN, MIDDLE RD MERLIN	13021	A	77	42:15	82:13	3
HWY40 (OPP LAMBTON GS) COURTRIGHT	14016	A	69	42:48	82:29	4
CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	14064	A	76	42:59	82:24	3
M.T.C. SHED, SARNIA	14118	A	77	42:57	82:12	4
WRN FAIR GROUNDS, KING/RECTORY LONDON	15001	A	70	42:59	81:13	4
LONGWOODS CONSERVATION AUTHORITY	15009	A	83	42:53	81:29	4
PUC BLDG PARKHILL	15013	A	83	43:10	81:41	5
951 COMMISSIONERS RD E LONDON	15015	A	86	42:58	81:13	4
801 COMMISSIONERS RD E LONDON	15016	A	86	42:57	81:13	4
8 MOUNTSFIELD DR LONDON	15017	A	86	42:58	81:15	4
CONCESSION RD 2 LOT A TIVERTON	18007	A	79	44:18	81:35	4
EXPERIMENTAL FARM SIMCOE	22071	A	75	42:51	80:16	4
CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	22086	I	77	42:52	80:00	5
TOWNLINE RD/CON 13 TOWNSEND	22094	I	86	42:54	80:09	4
PROVINCIAL PARK LONG POINT	22901	A	79	42:35	80:23	4
WALPOLE S PS, SANDUSK RD NANTICOKE	22904	I	79	42:50	80:02	4
RAINHAM RD (NEAR STELCO GATE) NANTICOKE	22907	I	84	42:49	80:05	4
EDNA/FREDERICK STS KITCHENER	26029	A	76	43:27	80:28	5
WEBER/UNIVERSITY WATERLOO	26045	A	88	43:29	80:31	4
NIAGARA FALLS RD/ONTARIO ST THOROLD	27042	I	78	43:06	79:12	5
HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	27051	I	79	43:04	79:04	16
185 QUEEN ST S THOROLD	27052	I	83	43:07	79:12	1
STP GROUNDS, STANLEY AV NIAGARA FALLS	27055	I	83	43:08	79:05	4
ALLENDALE AV NIAGARA FALLS	27056	A	83	43:05	79:05	5
ARGYLE CRESCENT ST CATHARINES	27067	A	87	43:10	79:14	4
EXHIBITION ST/CLARK ST GUELPH	28028	A	86	43:33	80:16	4
ELGIN/KELLY HAMILTON	29000	A	87	43:15	79:52	4
HUGHSON/HUNTER HAMILTON	29001	A	61	43:15	79:52	9
BARTON/WENTWORTH HAMILTON	29025	I	69	43:16	79:51	4
467 BEACH BLVD HAMILTON	29102	A	84	43:17	79:47	4

TABLE A-2 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
NASH RD/KENTLEY DR HAMILTON	29105	A	85	43:14	79:46	4
VICKERS RD/EAST 5TH ST HAMILTON	29114	A	85	43:14	79:52	3
MAIN ST/W HWY 403 HAMILTON	29118	A	85	43:15	79:54	3
MISSION, 381 YONGE ST TORONTO	31049	A	72	43:40	79:23	4
26 BREADALBANE TORONTO	31104	A	81	43:40	79:23	15
PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	31120	A	81	43:40	79:27	9
CN TOWER, 301 FRONT ST W TORONTO	31190	A	85	43:39	79:23	444
LEASIDE HYDRO STATION EAST YORK	32010	A	88	43:42	79:21	5
LAWRENCE/KENNEDY SCARBORO	33003	A	70	43:45	79:16	4
REDLAND CR (SCARB BLUFFS) SCARBORO	33019	A	69	43:43	79:14	1
SC CTR, 770 DON MILLS RD NORTH YORK	34002	A	69	43:43	79:20	17
HENDON AVE (YONGE ST/FINCH AVE) NORTH YORK	34020	A	88	43:47	79:25	5
35 EDGAR AVE.	34025	A	88	43:43	79:32	5
ELMCREST RD (CENTENNIAL PK) ETOBICOKE	35003	A	69	43:39	79:35	4
QUEENSWAY HOSPITAL ETOBICOKE	35005	I	68	43:37	79:34	9
EVANS/ARNOLD AV ETOBICOKE	35033	A	67	43:37	79:31	3
125 RESOURCES RD (MOE LAB) ETOBICOKE	35050	A	76	43:43	79:32	18
CLEARVIEW HEIGHTS	36030	A	88	43:42	79:29	5
HWY2/NORTH SHORE BLVD E BURLINGTON	44008	A	79	43:19	79:48	17
BRONTE RD/WOBURN CRES OAKVILLE	44015	A	80	43:24	79:44	5
PS, RITSON RD/OLIVE AV OSHAWA	45025	A	79	43:53	78:51	5
QUEENSWAY W/HURONTARIO ST MISSISSAUGA	46110	A	77	43:34	79:37	5
MEADOW PK, APPLE LANE COUNTRY CLUB, MIS'A	46117	I	87	43:31	79:36	5
509 VICTORIA ST E ALLISTON	47035	A	81	44:09	79:51	4
ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	47042	A	83	44:23	79:42	12
HWY47/E OF HWY48 STOUFFVILLE	48002	A	74	43:58	79:16	5
HWY 117/PAINT LAKE RD DORSET	49010	A	81	45:13	78:56	3
MCD GDS, RIDEAU/WURTENBURG ST OTTAWA	51001	A	71	45:26	75:41	4
NAPIER ST, KINGSTON	52020	A	88	44:14	76:31	5
MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	56051	A	70	45:01	74:44	4
SCHOOL, 435 SECOND ST W CORNWALL	56068	I	75	45:01	74:44	6
ST PETER'S SCHOOL CORNWALL	56071	I	84	44:59	75:27	4
CITY HALL, 500 GEORGE ST PETERBORO	59006	A	76	44:19	78:19	18
SEWAGE TREATMENT PLT BALMERTOWN	61014	I	82	51:03	93:44	6
35 VAN HORNE AV DRYDEN	61027	I	84	49:47	92:50	15
PORTAGE/CHURCH ST FORT FRANCES	62030	I	76	48:37	93:24	4
CEMETERY,COLONIZATION RD W FORT FRANCES	62032	I	76	48:37	93:25	5
HOSPITAL, 35 ALGOMA ST N THUNDER BAY	63022	A	78	48:26	89:13	22
PENINSULA BLDG MARATHON	63034	I	82	48:43	86:23	12
CAN-CAR, MONTREAL ST THUNDER BAY	63046	I	76	48:21	89:18	3

TABLE A-2 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
RECREATION CENTRE RED ROCK	63084	I	81	48:57	88:15	7
ST MARTIN SCHOOL TERRACE BAY	63090	I	81	48:47	87:06	8
HAWKEYE LAKE	63100	A	83	48:40	89:29	4
MTC 615 JAMES ST S THUNDER BAY	63200	A	86	48:23	89:17	3
MN. MERRIFIELD SCHOOL SAULT STE MARIE	71068	A	87	46:32	84:21	3
LADY DUNN HOSPITAL WAWA	71069	A	86	48:00	84:46	3
WAWA MOTOR INN WAWA	71070	A	86	47:59	84:47	3
ROSS ROAD SMOOTH ROCK FALLS	72084	A	86	49:17	81:37	4
R.R.#1 LOT 11 CONC. 1 MATHESON TWNSHP	72089	I	87	48:33	81:04	3
OPP STN NORTH BAY	75010	A	79	46:19	79:27	4
SKEAD	77012	A	52	46:39	80:46	5
HANMER	77013	A	73	46:39	80:57	5
WATER TANK, ASH ST SUDBURY	77016	A	69	46:30	81:00	3
GOVERNMENT RD/EDWARD ST CONISTON	77028	A	74	46:29	80:51	5
FALCONBRIDGE RD GARSON	77065	A	76	46:34	80:51	5
KENNEDY ST NEW SUDBURY	77075	A	76	46:31	80:57	5
LONG LAKE RD (VILLA LOYOLA) SUDBURY	77096	A	80	46:24	81:01	4
NIKKOLA (J HAMILTON SCHOOL) WALDEN	77201	A	82	46:25	81:07	5
SCIENCE NORTH SUDBURY	77203	A	84	46:28	80:59	10
ST LAURENT/REGIONAL RD RAYSIDE	77206	A	85	46:36	81:06	4
LOT 2-PLAN M-1025 (R. DOW POOL) COPPER CL	77218	I	87	46:28	81:04	4

TABLE A-3 THE PARTICULATE (DAILY) NETWORK (1988)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
GODERICH	10015	A	74	6	.	.	.	.	.	.	.	.	.	.
ST MARYS	11001	A	78	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- CITY HALL	12002	A	69	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- RIVERSIDE	12005	A	78	6	6	6	6	6	6	6	6	6	6	6
LA SALLE	12006	A	83	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- WRIGHT	12007	A	84	6	.	.	.	6	.	.	6	.	.	.
WINDSOR- UNIVERSITY	12008	A	70	1	1	1	1	1	1	1	1	1	1	1
LITTLE RIVER	12009	A	71	6	.	.	.	.	.	.	6	.	.	.
WINDSOR- MANNING	12010	A	71	6	6	6	6	6	6	6	6	6	.	.
WINDSOR-DROUILLARD	12011	A	88	6	6	6	6	6	6	6	6	.	.	.
WINDSOR- WYANDOTTE	12013	A	71	6	6	6	6	6	6	6	6	6	.	.
WINDSOR- PROSPECT	12015	A	71	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- COLLEGE	12016	A	75	6	.	.	.	6	.	.	.	.	.	.
WINDSOR- GEORGE	12036	A	77	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- CALIFORNIA	12037	A	77	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- HOWARD	12038	I	77	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- DOUGALL 1	12039	I	78	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- DOUGALL 2	12047	A	85	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- ALEXANDRINE	12049	A	85	6	6	6	6	6	6	6	6	6	6	6
WINDSOR-CAPITOL	12051	A	86	6	6	6	6	6	6	6	6	6	6	6
AMHERSTBURG	12053	A	81	6	.	.	.	.	.	.	.	.	.	.
CHATHAM	13003	A	69	6	6	6	6	6	6	6	6	6	.	.
SARNIA- MITTON	14001	A	62	6	.	.	.	.	.	.	.	.	.	.
COURTRIGHT- HWY 40	14016	A	69	1	1	1	1	1	1	1	1	1	1	1
CORUNNA- R.R. #1	14030	A	78	6	6	6	6	6	6	6	6	6	.	.
MOORETOWN	14031	A	78	6	6	6	6	6	6	6	6	6	.	.
SARNIA- POINT EDWARD	14054	A	66	6	.	.	.	.	.	.	.	.	.	.
CORUNNA- ST CLAIR	14059	A	76	6	.	.	.	.	.	.	.	.	.	.
SARNIA- CENTENNIAL	14064	A	76	6	6	6	6	6	6	6	6	6	6	6
SARNIA- DAVID	14151	A	79	6	.	.	.	.	.	.	.	.	.	.
SARNIA	14152	I	87	3	.	.	.	3	3	.	3	.	.	.
SARNIA	14153	I	87	3	.	.	.	3	3	.	3	.	.	.
LONDON- FAIR GROUNDS	15001	A	70	6	6	6	6	6	6	6	6	6	6	6
ST THOMAS- ALEX'DRIA	15006	I	75	6	.	.	.	.	.	.	.	.	.	.
ST THOMAS- EDGEWARE	15008	I	81	6	.	.	.	.	.	.	6	.	.	.
LONGWOODS	15009	A	83	3	3	3	3	3	3	3	3	3	.	.
LONDON	15014	A	86	6	6	6	6	6	6	6	6	6	6	6
LONDON	15015	A	86	6	6	6	6	6	6	6	6	6	6	6
LONDON	15016	A	86	6	6	6	6	6	6	6	6	6	6	6
LONDON	15017	A	86	6	6	6	6	6	6	6	6	6	6	6

TABLE A-3 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
15016- BACKUP	15116	A	87	6	6	6	6	6	6	6	6	6	.	.
BEACHVILLE	17006	I	74	6	6	6	6	6	6	6	6	6	.	.
INGERSOLL	17020	I	81	6	6	6	6	6	6	6	6	6	.	.
EMBRO	17021	I	83	3	.	.	.	.	.	.	.	.	.	.
JARVIS- JAMES	22087	A	80	6	.	.	.	.	.	.	.	.	.	.
PORT DOVER	22090	A	83	6	.	.	.	.	.	.	.	.	.	.
JARVIS- RAINHAM	22092	I	85	6	.	.	.	.	.	.	.	.	.	.
HAGERSVILLE	22095	I	88	3	.	.	.	.	.	.	.	.	.	.
HAGERSVILLE	22096	I	88	3	.	.	.	.	.	.	.	.	.	.
NANTICOKE- WALPOLE	22904	I	84	6	.	.	.	.	.	.	.	.	6	6
NANTICOKE- RAINHAM	22907	I	84	6	6	6	6	6	6	6	6	6	.	.
NANTICOKE- RD	22961	I	79	6	.	.	.	.	.	.	.	.	.	.
NANTICOKE- GS	22964	I	84	6	.	.	.	.	.	.	.	.	.	.
NANTICOKE- HWY 6	22965	I	84	6	.	.	.	.	.	.	.	.	.	.
KITCHENER	26029	A	76	6	6	6	6	6	6	6	6	6	6	6
ALLISTON- VIOLET HILL	26048	I	87	6	.	.	.	.	.	.	.	.	.	.
ST CATHARINES- KING	27008	A	87	6	6	6	6	6	6	6	6	6	6	6
WELLAND	27045	I	78	6	.	.	.	.	.	.	.	.	.	.
PORT COLBORNE- DAVIS	27047	I	79	6	.	.	.	.	.	6	.	.	.	.
NIAGARA F- VICTORIA	27050	I	79	6	.	.	.	.	.	.	.	.	.	.
CHIPPAWA- NORTON	27051	I	79	6	.	.	.	.	.	.	.	.	.	.
THOROLD- QUEEN	27052	I	82	6	.	.	.	.	.	.	.	.	.	.
NIAGARA F- STANLEY	27055	I	82	6	.	.	.	.	.	.	.	.	.	.
NIAGARA F- ALLENDALE	27056	A	83	6	.	.	.	.	.	.	.	.	6	6
GUELPH- HANLON	28027	I	81	6	.	.	.	.	.	.	.	.	.	.
GUELPH- EXHIBITION	28028	A	86	6	.	.	.	.	.	.	6	.	6	6
HAMILTON- ELGIN	29000	A	88	1	.	.	.	.	.	.	.	.	.	.
HAMILTON- KENILWORTH	29009	A	69	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- BURLINGTON	29011	I	73	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- WELLINGTON	29012	A	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- CHATHAM	29017	A	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- WENTWORTH	29025	I	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- HUGHSON	29067	A	73	6	6	6	6	6	6	6	6	6	.	.
HAMILTON- CUMBERLAND	29087	A	79	6	.	.	.	.	.	.	.	.	6	6
HAMILTON- BARTON	29089	A	80	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- BAY	29098	A	83	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- BEACH	29102	A	85	1	6	6	6	6	6	6	6	6	6	6
GREENSVILLE	29111	I	86	6	.	.	.	.	.	.	.	.	.	.
GREENSVILLE	29112	I	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- GERTRUDE	29113	A	86	6	.	.	.	.	.	.	.	.	.	.

TABLE A-3 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
HAMILTON- VICKERS	29114	A	85	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- MAIN W	29118	A	85	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- MORLEY	29119	A	86	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- DUNDURN	29122	A	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- EWEN	29130	A	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- ALBION S	29135	A	87	6	.	.	.	.	.	.	.	.	.	.
TORONTO- BRUCE PS	31045	I	86	1	1	1	1	1	1	1	1	1	.	.
TORONTO- MOSLEY	31058	I	73	1	1	1	1	1	1	1	1	1	.	.
TORONTO	31065	I	87	1	1	1	1	1	1	1	1	1	.	.
TORONTO- HAMILTON	31082	I	74	1	.	.	.	.	.	.	1	.	.	.
TORONTO- TECUMSETH	31085	I	79	1	1	1	1	1	1	1	1	1	.	.
TORONTO- BREADALBANE	31104	A	81	1	1	1	1	1	1	1	1	1	1	1
TORONTO- JUNCTION	31120	A	81	3	3	3	3	3	3	3	3	3	.	.
TORONTO- BATHURST	31181	I	83	1	1	1	1	1	1	1	1	1	.	.
TORONTO- FORT YORK	31183	I	87	1	1	1	1	1	1	1	1	1	.	.
EAST YORK- LEASIDE	32010	A	87	3	.	.	.	.	.	.	3	.	3	3
SCARBORO- LAWRENCE	33003	A	70	3	.	.	.	.	.	.	3	.	3	3
NORTH YORK-WEST	34025	A	87	3	.	.	.	.	.	.	3	.	3	3
ETOBICOKE- ELMCREST	35003	A	69	3	.	.	.	.	.	.	3	.	3	3
ETOBICOKE- EVANS	35033	A	69	3	.	.	.	.	.	.	3	.	3	3
ETOBICOKE- MOL LAB	35051	A	80	1	.	.	.	.	.	.	.	.	.	.
OAKVILLE- SEWAGE PL	44005	I	86	W	W	W	W	W	W	W	W	W	.	.
BURLINGTON	44008	A	79	6	.	.	.	.	.	.	6	.	6	6
OAKVILLE	44015	I	80	3	.	.	.	.	.	.	3	.	3	3
PICKERING- FIRE HALL	45001	I	70	1	.	.	.	.	.	.	.	.	.	.
AJAX- HOSPITAL	45007	I	75	1	.	.	.	.	.	.	.	.	.	.
OSHAWA- RITSON	45025	A	79	3	.	.	.	.	.	.	3	.	3	3
AJAX	45080	I	87	3	3	3	3	3	3	3	3	3	.	.
AJAX	45081	I	87	3	3	3	3	3	3	3	3	3	.	.
BRAMALEA	46033	A	69	6	.	.	.	.	.	.	6	.	6	6
MIS'AUGA- 2414 DIXIE	46041	I	72	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- 2365 DIXIE	46045	I	73	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- 2360 DIXIE	46046	I	73	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- QUEENSWAY	46110	A	78	3	.	.	.	.	.	.	3	.	3	3
ORILLIA	47019	A	77	6	.	.	.	.	.	.	.	.	6	6
BARRIE	47042	A	82	3	.	.	.	.	.	.	3	.	3	3
STOUFFVILLE	48002	A	80	3	.	.	.	.	.	.	3	.	3	3
KESWICK- BROWN	48140	I	85	W	W	W	W	W	W	W	W	W	.	.
KESWICK- INGHAM	48141	I	85	W	W	W	W	W	W	W	W	W	.	.
KESWICK- CALDERARO	48142	I	85	W	W	W	W	W	W	W	W	W	.	.

TABLE A-3 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
DORSET- HWY 117	49011	A	87	1	.	.	.	.	.	.	.	.	.	.
PORT HOPE- SHUTER	58027	I	75	S	.	.	.	.	.	.	.	.	S	S
PORT HOPE- MARSH	58041	I	84	S	.	.	.	.	.	.	.	.	S	S
PORT HOPE- QUEEN	58042	I	84	S	.	.	.	.	.	.	.	.	S	S
RED LAKE-YONGE ST.	61015	I	88	6	.	.	.	.	.	.	6	.	.	.
DRYDEN	61027	I	87	6	.	.	.	.	.	.	.	.	.	.
ATIKOKAN	62013	A	76	6	.	.	.	.	.	.	.	.	.	.
FORT FRANCES	62030	I	76	6	.	.	.	.	.	.	.	.	.	.
F FRANCES- COLONIZ'N	62032	A	76	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- ARCHIBALD	63005	A	70	6	6	6	6	6	6	6	6	6	6	6
THUNDER B- DAWSON	63012	A	70	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- ALGOMA	63022	A	69	6	6	6	6	6	6	6	6	6	6	6
THUNDER B- MONTREAL	63046	I	78	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- WILLIAM	63052	A	80	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- JAMES ST	63200	A	86	6	.	.	.	.	.	.	6	.	6	6
THUNDER BAY- S.T.P *	63301	I	75	6	.	.	.	.	.	.	.	.	.	.
THUNDER BAY- T.B.T *	63303	I	75	6	.	.	.	.	.	.	.	.	.	.
S.S.MARIE- BONNEY	71042	I	75	1	1	1	1	1	1	1	1	1	1	1
S.S.MARIE- QUEEN	71049	A	75	6	6	6	6	6	6	6	6	6	6	6
BLIND RIVER	71065	A	82	6	.	.	.	.	.	.	.	.	.	.
S.S.MARIE- MN. S	71068	A	87	6	6	6	6	6	6	6	6	6	6	6
S.S.MARIE	71071	I	86	6	.	.	6	6	6	6	6	.	6	6
S.S.MARIE	71072	I	86	6	6	6	6	6	6	6	6	6	6	6
TIMMINS	72077	I	84	6	6	6	6	6	6	6	6	6	6	6
HEARST- LEBLANC	72080	I	87	6	.	.	.	.	.	.	.	.	.	.
NORTH BAY	75010	A	79	6	6	6	6	6	6	6	6	6	6	6
SUDBURY- ASH	77016	A	69	6	6	6	6	6	6	6	6	6	6	6
SUDBURY- LISGAR	77026	A	72	6	6	6	6	6	6	6	6	6	6	6
ESPANOLA- SPRUCE	77029	A	77	6	.	.	.	.	.	.	.	.	.	.
COPPER CLIFF- NICKEL	77070	I	76	6	6	6	6	6	6	6	6	6	6	6
ESPANOLA	77214	I	87	1	.	.	.	.	.	.	.	.	.	.
ESPANOLA	77215	I	87	2	.	.	.	.	.	.	.	.	.	.

* operated by Thunder Bay Terminals Ltd.

TABLE A-4 LOCATIONS OF PARTICULATE (DAILY) STATIONS (1988)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
PUC BLDG, 64 WEST ST GODERICH	10015	A	74	43:45	81:43	6
309 THOMAS ST ST MARYS	11001	A	78	43:15	81:09	30
CITY HALL, 444 WINDSOR AV WINDSOR	12002	A	69	42:19	83:02	15
7730 RIVERSIDE DR E WINDSOR	12005	A	78	42:20	82:57	10
BEACH LANE/HWY 18 LA SALLE	12006	A	83	42:14	83:06	4
WRIGHT/WATER ST WINDSOR	12007	A	84	42:17	83:06	4
467 UNIVERSITY AV W WINDSOR	12008	A	70	42:19	83:03	8
9725 RIVERSIDE DR E LITTLE RIVER	12009	A	71	42:20	82:56	2
SEWAGE STN, MANNING RD WINDSOR	12010	A	71	42:20	82:52	1
DROUILLARD RD/RICHMOND ST WINDSOR	12011	A	88	42:19	83:00	1
FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	12013	A	71	42:19	83:00	6
SEWAGE STN, HWY 18/PROSPECT WINDSOR	12015	A	71	42:17	83:05	5
COLLEGE/SOUTH ST WINDSOR	12016	A	75	42:18	83:04	4
1802 GEORGE AV WINDSOR	12036	A	77	42:19	82:59	5
3225 CALIFORNIA ST WINDSOR	12037	A	77	42:16	83:02	4
2885 HOWARD AV WINDSOR	12038	I	77	42:17	83:01	1
DOUGALL/E.C. ROW W WINDSOR	12039	I	78	42:17	83:01	5
DORWIN PLAZA, DOUGALL AV WINDSOR	12047	A	85	42:17	83:02	3
643 ALEXANDRINE WINDSOR	12049	A	85	42:17	83:01	1
604 CAPITOL/REMINGTON WINDSOR	12051	A	86	42:17	83:01	1
415 FRONT ST AMHERSTBURG	12053	A	81	42:08	83:07	14
POST OFFICE, 10 CENTRE ST CHATHAM	13003	A	69	42:24	82:11	12
GENERAL HOSPITAL, 220 NITTON ST SARNIA	14001	A	62	42:58	82:24	15
HWY40 (OPP LAMBTON GS) COURTRIGHT	14016	A	69	42:48	82:29	4
R.R. #1 (W OF HOUSE) CORUNNA	14030	A	78	42:53	82:17	1
R.R. #1 (W OF BARN) MOORETOWN	14031	A	78	42:52	82:18	1
SARNIA YACHT CLUB, POINT EDWARD SARNIA	14054	A	66	43:00	82:25	5
ST CLAIR BLVD/HWY 40 CORUNNA	14059	A	76	42:53	82:27	4
CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	14064	A	76	42:59	82:24	3
DAVID/FRONT ST SARNIA	14151	A	79	42:59	82:24	4
SARNIA POLICE STATION (ROOF)	14152	I	87	42:59	82:24	5
704 NARA ST. POINT EDWARD- SARNIA	14153	I	87	42:59	82:24	9
MRN FAIR GROUNDS, KING/RECTORY LONDON	15001	A	70	42:59	81:13	4
16 ALEXANDRIA ST ST THOMAS	15006	I	75	42:47	81:11	6
EDGEWARE RD (NWW VARTA PLT) ST THOMAS	15008	I	81	42:48	81:09	2
LONGWOODS CONSERVATION AUTHORITY	15009	A	83	42:53	81:29	2
POND MILLS RD/DEVERON CRES LONDON	15014	A	86	42:58	81:12	4
951 CONNISSIONERS RD E LONDON	15015	A	86	42:58	81:13	4
801 CONNISSIONERS RD E LONDON	15016	A	86	42:57	81:13	4
8 MOUNTSFIELD DR LONDON	15017	A	86	42:58	81:15	4

TABLE A-4 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
801 COMMISSIONERS RD E LONDON	15116	A	87	42:57	81:13	4
ST ANTHONY'S SS, HWY 2 BEACHVILLE	17006	I	74	43:05	80:50	6
HWY 2 RR 2 (J SPRIEL PROP) INGERSOLL	17020	I	81	43:04	80:51	2
OXFORD CTY RD 6 (HESSTON FARM) EMBRO	17021	I	83	43:06	80:52	1
JARVIS COMMUNITY CENTRE,JAMES ST JARVIS	22087	A	80	42:53	80:07	4
ST GEORGE/ALMA PORT DOVER	22090	A	83	42:47	80:13	5
RAINHAM RD/SANDUSK RD JARVIS	22092	I	85	42:49	80:02	4
HWY 6 (SEMINGTON PROP) HAGERSVILLE	22095	.	88	42:58	80:02	1
ALMA/LAIDLAW ST HAGERSVILLE	22096	.	88	42:57	80:03	1
WALPOLE S PS, SANDUSK RD NANTICOKE	22904	I	.	42:50	80:02	4
RAINHAM RD (NEAR STELCO GATE) NANTICOKE	22907	I	84	42:49	80:05	4
NANTICOKE RD/WALPOLE CON 2 NANTICOKE	22961	I	79	42:49	80:04	3
N 2 KM NANTICOKE GS NANTICOKE	22964	I	84	42:50	80:05	4
HWY 6/NORFOLK CON 2 JARVIS	22965	I	84	42:49	80:09	2
EDNA/FREDERICK STS KITCHENER	26029	A	76	43:27	80:28	5
MONO-MULMAR SCHOOL, HWY89 VIOLET HILL	26048	I	87	44:06	80:06	5
71 KING ST ST CATHARINES	27008	A	87	43:10	79:15	12
337 ALBERTA/DEVON ST WELLAND	27045	I	78	42:58	79:15	1
DAVIS/FRAZER PORT COLBORNE	27047	I	79	42:53	79:15	3
4057 VICTORIA AV NIAGARA FALLS	27050	I	79	43:07	79:04	4
HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	27051	I	79	43:04	79:04	16
185 QUEEN ST S THOROLD	27052	I	82	43:07	79:12	1
STP GROUNDS, STANLEY AV NIAGARA FALLS	27055	I	82	43:08	79:05	4
ALLENDALE AV NIAGARA FALLS	27056	A	83	43:05	79:05	5
HANLON EXPWY/SPEED RIVER GUELPH	28027	I	81	43:31	80:16	6
EXHIBITION ST/CLARK ST GUELPH	28028	A	86	43:33	80:16	4
ELGIN/KELLY HAMILTON	29000	A	88	43:15	79:52	4
KENILWORTH HAMILTON	29009	A	69	43:15	79:49	6
BURLINGTON/LEEDS HAMILTON	29011	I	73	43:16	79:49	5
BURLINGTON/WELLINGTON HAMILTON	29012	A	69	43:16	79:51	7
CHATHAM/FRID HAMILTON	29017	A	69	43:15	79:54	5
BARTON/WENTWORTH HAMILTON	29025	I	69	43:16	79:51	4
450 HUGHSON ST N HAMILTON	29067	A	73	43:16	79:52	5
405 CUMBERLAND AV HAMILTON	29087	A	79	43:15	79:50	4
BARTON/NASH RD HAMILTON	29089	A	80	43:14	79:46	6
BAY/MAIN ST HAMILTON	29098	A	83	43:15	79:53	23
467 BEACH BLVD HAMILTON	29102	A	85	43:17	79:47	4
OFIELD RD/HWY 5 GREENSVILLE	29111	I	86	43:18	79:59	1
HARVEST RD/WESITE GREENSVILLE	29112	I	87	43:17	79:59	1
GERTRUDE/DEPEW HAMILTON	29113	I	86	43:15	79:49	4

TABLE A-4 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31 DEC-88, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
VICKERS RD/EAST 18TH ST HAMILTON	29114	A	85	43:14	79:52	3
MAIN ST/W HWY 403 HAMILTON	29118	A	85	43:15	79:54	3
MORLEY ST/PARKDALE AV HAMILTON	29119	I	86	43:15	79:47	4
DUNDURN/YORK HAMILTON	29122	A	87	43:16	79:53	10
EWEN RD/WHITNEY AV HAMILTON	29130	A	87	43:15	79:56	1
ALBRIGHT RD/MT ALBION RD HAMILTON	29135	A	87	43:13	79:48	8
BRUCE PS, 51 LARCHMOUNT AV TORONTO	31045	I	86	43:40	79:20	6
MOSLEY/LESLIE STS TORONTO	31058	I	73	43:40	79:20	5
A.R.CLARKE CO. 633 EASTERN AVE. TORONTO	31065	I	87	43:40	79:20	12
WORKS DEPT, 138 HAMILTON AV TORONTO	31082	I	74	43:40	79:21	5
TECUMSETH/NIAGARA ST TORONTO	31085	I	79	43:38	79:24	5
26 BREADALBANE TORONTO	31104	A	81	43:40	79:23	15
PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	31120	A	81	43:39	79:27	9
60 BATHURST ST TORONTO	31181	I	83	43:39	79:24	6
FORT YORK, TORONTO	31183	I	87	43:38	79:24	3
LEASIDE HYDRO STATION EAST YORK	32010	A	87	43:42	79:21	1
LAWRENCE/KENNEDY SCARBORO	33003	A	70	43:45	79:16	4
35 EDGAR AVE NORTH YORK	34025	A	87	43:43	79:32	5
ELMCREST RD (CENTENNIAL PK) ETOBICOKE	35003	A	69	43:39	79:35	4
EVANS/ARNOLD AV ETOBICOKE	35033	A	69	43:37	79:31	3
RESOURCES RD (MOL LAB) ETOBICOKE	35051	A	80	43:43	79:33	11
2487 LAKESHORE RD. E OAKVILLE	44005	I	86	43:29	79:38	10
HWY 2/NORTH SHORE BLVD E BURLINGTON	44008	A	79	43:19	79:48	17
BRONTE RD/WOBURN CRES OAKVILLE	44015	I	80	43:24	79:44	5
FIRE HALL, BAYLY/BROCK PICKERING	45001	I	70	43:50	79:04	1
AJAX-PICKERING HOSP AJAX	45007	I	75	43:50	79:01	15
PS, RITSON RD/OLIVE AV OSHAWA	45025	A	79	43:53	78:51	5
FINLEY RD, ANIMAL HOSPITAL AJAX	45080	I	87	43:50	79:02	1
65 HARWOOD AVE, AJAX WORKS DEPT, AJAX	45081	I	87	43:50	79:02	1
FIRE HALL, BRAMALEA RD BRAMALEA	46033	A	69	43:42	79:42	3
2414 DIXIE RD MISSISSAUGA	46041	I	72	43:36	79:35	5
2365 DIXIE RD MISSISSAUGA	46045	I	73	43:36	79:35	5
2360 DIXIE RD MISSISSAUGA	46046	I	73	43:36	79:35	12
QUEENSWAY W/HURONTARIO ST MISSISSAUGA	46110	A	78	43:34	79:37	5
POST OFFICE, 17-25 PETER ST S ORILLIA	47019	A	77	44.34	79.87	10
ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	47042	A	82	44:23	79:42	12
HWY47/E OF HWY48 STOUFFVILLE	48002	A	80	43:58	79:16	5
CON 5 (BROWN PROP) KESWICK	48140	I	85	44:13	79:25	1
RR2 (INGHAM PROP) KESWICK	48141	I	85	44:13	79:25	1
RR2 (CALDERARO PROP) KESWICK	48142	I	85	44:13	79:26	1

TABLE A-4 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-88, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
HWY117 PAINT LAKE ROAD DORSET	49011	A	87	45:13	78:56	1
51 SHUTER ST PORT HOPE	58027	I	75	43:57	78:17	4
FILT PLT, MARSH ST PORT HOPE	58041	I	84	43:57	78:18	1
CAN TIRE, QUEEN ST PORT HOPE	58042	I	84	43:57	78:18	1
18 YOUNG STREET- RED LAKE	61015	I	88	51:06	81:49	1
35 VAN HORNE AVENUE (ROOF) DRYDEN	61027	I	87	49:47	92:50	15
WEATHER STN ATIKOKAN	62013	A	76	48:45	91:36	1
PORTAGE/CHURCH ST FORT FRANCES	62030	I	72	48:37	93:24	3
CEMETERY,COLONIZATION RD W FORT FRANCES	62032	A	76	48:37	93:25	5
HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	63005	A	70	48:23	89:15	29
DAWSON CT/ALGOMA ST N THUNDER BAY	63012	A	70	48:27	89:12	9
HOSPITAL, 35 ALGOMA ST N THUNDER BAY	63022	A	69	48:26	89:13	22
CAN-CAR, MONTREAL ST THUNDER BAY	63046	I	78	48:21	89:18	3
TRNSIT MAINT RD, WILLIAM RD THUNDER BAY	63052	A	80	48:25	89:14	9
MTC 615 JAMES ST S THUNDER BAY	63200	A	86	48:23	89:17	3
SEWAGE TREATMENT PLANT, THUNDER BAY *	63301	I	75	48:24	89:14	5
THUNDER BAY TERMINALS #3 THUNDER BAY *	63303	I	75	48:23	89:13	7
UMPHOUSE, CONNEY ST SAULT STE MARIE	71042	I	75	46:31	84:23	1
AND OFFICE, QUEEN ST SAULT STE MARIE	71049	A	75	46:31	84:20	6
HOSPITAL, LAKESHORE AV BLIND RIVER	71065	A	82	46:11	82:58	12
WM. MERRIFIELD SCHOOL SAULT STE MARIE	71068	A	87	46:32	84:21	3
BOUNDRY RD/BENNET SAULT STE MARIE	71071	I	86	46:31	84:16	2
FIRST AV/SECOND LINE SAULT STE MARIE	71072	I	86	46:32	84:22	2
MINISTRY OF HEALTH BLDG TIMMINS	72077	A	84	48:28	81:20	5
CUSTOM SAWMILL RD (LEBLANC PROP) HEARST	72080	I	87	49:41	83:39	5
OPP STN NORTH BAY	75010	A	79	46:19	79:27	4
WATER TANK, ASH ST SUDBURY	77016	A	69	46:30	81:00	3
19 LISGAR ST SUDBURY	77026	A	72	46:30	81:00	14
POST OFFICE, SPRUCE/BARBER ST ESPANOLA	77029	A	77	46:16	81:46	6
PUMPHOUSE, NICKEL ST COPPER CLIFF	77070	I	76	46:28	81:04	5
EXECOTEL HOTEL (FRONT) ESPANOLA	77214	I	87	46:16	81:46	2
EXECOTEL HOTEL (BACK) ESPANOLA	77215	I	87	46:16	81:46	2

* operated by Thunder Bay Terminals Ltd.

TABLE A-5 SULPHUR DIOXIDE (SO_2) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
12007	WRIGHT/WATER ST WINDSOR	363	.000	.000	.001	.007	.017	.041	.008	0.13	0.04	0	0	0
12008	467 UNIVERSITY AV W WINDSOR	364	.000	.000	.004	.009	.022	.049	.011	0.13	0.05	0	0	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	362	.000	.000	.000	.004	.012	.035	.006	0.18	0.03	0	0	0
12016	COLLEGE/SOUTH ST WINDSOR	365	.000	.000	.001	.006	.017	.045	.008	0.14	0.03	0	0	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	348	.000	.000	.000	.004	.010	.033	.006	0.16	0.03	0	0	0
12048	MALDEN RD (S LAURIER DR) WINDSOR	360	.000	.000	.000	.000	.009	.030	.004	0.10	0.02	0	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	352	.000	.000	.000	.002	.010	.052	.006	0.17	0.06	0	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	363	.000	.000	.000	.000	.019	.111	.009	0.24	0.11	0	1	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	354	.000	.000	.000	.002	.008	.019	.004	0.08	0.02	0	0	0
15015	951 COMMISSIONERS RD E LONDON	359	.000	.000	.000	.000	.002	.015	.001	0.08	0.01	0	0	0
15016	801 COMMISSIONERS RD E LONDON	364	.000	.000	.000	.000	.007	.019	.003	0.10	0.02	0	0	0
15017	8 MOUNTSFIELD DR LONDON	360	.000	.000	.000	.000	.003	.015	.002	0.10	0.01	0	0	0
18007	CONCESSION RD 2 LOT A TIVERTON	352	.000	.000	.000	.000	.007	.018	.003	0.07	0.02	0	0	0
22071	EXPERIMENTAL FARM SIMCOE	345	.000	.000	.000	.003	.009	.025	.005	0.29	0.04	1	0	0
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	364	.000	.000	.000	.004	.011	.051	.006	0.36	0.04	1	0	0

TABLE A-5 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
22094	TOWNLINE RD/CON 13 TOWNSEND	352	.000	.000	.000	.000	.003	.020	.002	0.21	0.03	0	0	0
22901	PROVINCIAL PARK LONG POINT	346	.000	.000	.000	.000	.005	.023	.002	0.10	0.02	0	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	359	.000	.000	.000	.000	.009	.043	.004	0.15	0.05	0	0	0
26029	EDNA/FREDERICK STS KITCHENER	364	.000	.000	.000	.000	.007	.018	.003	0.04	0.02	0	0	0
26045	WEBER/UNIVERSITY ST WATERLOO	214	.000	.000	.000	.000	.007	.017	.003	0.07	0.01	0	0	INS
27042	NIAGARA FALLS RD/ONTARIO ST THOROLD	321	.000	.000	.000	.004	.019	.031	.007	0.09	0.04	0	0	0
27051	HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	136	.000	.000	.002	.006	.011	.028	.007	0.12	0.03	0	0	INS
27052	185 QUEEN ST S THOROLD	342	.000	.000	.004	.010	.059	.175	.021	0.29	0.13	5	3	1
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	339	.000	.000	.001	.008	.025	.073	.011	0.18	0.10	0	0	0
27056	ALLENDALE AV NIAGARA FALLS	360	.000	.000	.000	.003	.010	.029	.005	0.09	0.03	0	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	350	.000	.000	.005	.010	.020	.042	.011	0.11	0.05	0	0	0
28028	EXHIBITION ST/CLARK ST GUELPH	357	.000	.000	.000	.002	.008	.023	.004	0.09	0.03	0	0	0
29000	ELGIN/KELLY ST HAMILTON	360	.000	.000	.000	.005	.016	.054	.008	0.18	0.05	0	0	0
29025	BARTON/WENTWORTH HAMILTON	361	.000	.000	.001	.007	.019	.056	.009	0.15	0.04	0	0	0
29102	467 BEACH BLVD HAMILTON	337	.000	.000	.000	.009	.030	.083	.012	0.17	0.07	0	0	0

TABLE A-5 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
29105	NASH RD/KENTLEY DR HAMILTON	357	.000	.000	.000	.003	.009	.029	.005	0.11	0.03	0	0	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	357	.000	.000	.000	.005	.014	.043	.007	0.12	0.04	0	0	0
29118	MAIN ST W/HWY 403 HAMILTON	279	.000	.000	.000	.004	.010	.028	.005	0.11	0.03	0	0	0
31104	26 BREADALBANE TORONTO	364	.000	.000	.000	.004	.015	.055	.007	0.16	0.03	0	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	362	.000	.000	.000	.005	.015	.059	.008	0.24	0.08	0	0	0
31190	CN TOWER, 301 FRONT ST W TORONTO	285	.000	.000	.000	.000	.009	.034	.004	0.19	0.03	0	0	0
32010	LEASIDE HYDRO STATION EAST YORK	198	.000	.000	.000	.000	.000	.014	.001	0.08	0.01	0	0	INS
33003	LAWRENCE/KENNEDY SCARBORO	362	.000	.000	.000	.006	.016	.048	.008	0.11	0.04	0	0	0
33019	REDLAND CR (SCARB BLUFFS) SCARBORO	335	.000	.000	.000	.000	.005	.027	.002	0.09	0.04	0	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	348	.000	.000	.000	.000	.005	.029	.002	0.20	0.06	0	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	209	.000	.000	.000	.003	.009	.034	.005	0.10	0.04	0	0	INS
34025	35 EDGAR AVE NORTH YORK WEST	210	.000	.000	.003	.007	.016	.042	.009	0.11	0.04	0	0	INS
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	296	.000	.000	.000	.003	.011	.035	.006	0.18	0.03	0	0	0
35005	QUEENSWAY HOSPITAL ETOBICOKE	360	.000	.000	.000	.002	.009	.029	.005	0.09	0.04	0	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	346	.000	.000	.001	.006	.015	.038	.008	0.16	0.04	0	0	0

TABLE A-5 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
35050	125 RESOURCES RD (MOE LAB) ETOBICOKE	326	.000	.000	.000	.000	.006	.019	.003	0.09	0.03	0	0	0
36030	CLEARVIEW HTGS/KEELE ST YORK	214	.000	.000	.000	.005	.011	.033	.006	0.14	0.03	0	0	INS
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	364	.000	.000	.000	.001	.008	.029	.004	0.11	0.03	0	0	0
44015	BRONTE RD/NOBURN CRES OAKVILLE	365	.000	.000	.000	.000	.010	.039	.005	0.10	0.04	0	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	364	.000	.000	.000	.005	.010	.026	.006	0.05	0.03	0	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	337	.000	.000	.000	.000	.008	.029	.004	0.28	0.03	1	0	0
46117	MEADOW PK, APPLE LANE CLUB MISSISSAUGA	366	.000	.000	.000	.005	.014	.037	.007	0.14	0.04	0	0	0
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	364	.000	.000	.000	.000	.002	.014	.001	0.08	0.02	0	0	0
48002	HWY47/E OF HWY48 STOUFFVILLE	354	.000	.000	.000	.000	.007	.020	.003	0.09	0.03	0	0	0
49010	HWY 117/PAINT LAKE RD DORSET	309	.000	.000	.000	.000	.000	.013	.001	0.14	0.01	0	0	0
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	364	.000	.000	.000	.000	.004	.020	.002	0.09	0.03	0	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	364	.000	.000	.000	.000	.014	.067	.006	0.23	0.05	0	0	0
59006	CITY HALL, 500 GEORGE ST PETERBORO	357	.000	.000	.000	.000	.005	.018	.002	0.06	0.02	0	0	0
61014	SEWAGE TREATMENT PLT BALMERTOWN	353	.000	.000	.000	.000	.001	.206	.008	0.69	0.12	57	2	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	351	.000	.000	.000	.000	.005	.010	.002	0.06	0.01	0	0	0

TABLE A-5 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
63200	MTC 615 JAMES ST S THUNDER BAY	357	.000	.000	.000	.000	.000	.007	.000	0.04	0.01	0	0	0
71068	MH. MERRIFIELD SCHOOL SAULT STE MARIE	362	.000	.000	.000	.000	.008	.049	.004	0.13	0.03	0	0	0
71069	LADY DUNN HOSPITAL WAWA	182	.000	.000	.000	.000	.007	.144	.007	0.71	0.09	16	0	INS
71070	WAWA MOTOR INN WAWA	357	.000	.000	.000	.000	.000	.014	.007	0.74	0.13	17	2	INS
72089	RR 1 LOT 11 CONC 1 MATHESON TWP HOYLE	356	.000	.000	.000	.000	.013	.141	.008	0.78	0.11	11	1	0
75010	OPP STN NORTH BAY	357	.000	.000	.000	.000	.005	.022	.002	0.13	0.04	0	0	0
77012	SKEAD	361	.000	.000	.000	.000	.012	.146	.008	0.67	0.07	18	0	0
77013	HANMER	361	.000	.000	.000	.000	.007	.077	.005	0.83	0.09	6	0	0
77016	WATER TANK, ASH ST SUDBURY	364	.000	.000	.000	.000	.014	.097	.007	0.49	0.09	17	0	0
77028	GOVERNMENT RD/EDWARD ST CONISTON	364	.000	.000	.000	.000	.006	.103	.005	0.50	0.07	8	0	0
77065	FALCONBRIDGE RD GARSON	368	.000	.000	.000	.000	.010	.115	.007	0.38	0.06	9	0	0
77075	KENNEDY ST NEW SUDBURY	357	.000	.000	.000	.000	.013	.119	.007	0.54	0.08	12	0	0
77096	LONG LAKE RD (VILLA LOYOLA) SUDBURY	364	.000	.000	.000	.000	.010	.116	.007	0.70	0.12	22	1	0
77201	MIKKOLA (J HAMILTON SCHOOL) WALDEN	359	.000	.000	.000	.000	.007	.128	.006	0.66	0.14	23	1	0
77203	SCIENCE NORTH SUDBURY	360	.000	.000	.000	.003	.012	.122	.009	0.80	0.10	30	0	0

TABLE A-5 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
77206	ST LAURENT/REGIONAL RD RAYSIDE	364	.000	.000	.000	.000	.005	.051	.003	0.54	0.06	9	0	0
77218	LOT 2-PLAN M-1025 COPPER CLIFF	258	.000	.000	.000	.002	.039	.324	.019	1.24	0.31	85	6	0

TABLE A-6 10 YEAR TREND FOR SO_2

Annual Mean (ppm)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BURLINGTON	.008	.005	.007	.005	.005	.005	.004	.004	.004	.004
CORNWALL	.013	.012	.010	.010	.008	.009	.009	.008	.006	.006
ETOBICOKE	.010	.008	.008	.006	.006	.007	.007	.005	.005	.006
HAMILTON	.017	.013	.010	.014	.014	.015	.009	.008	.007	.008
KITCHENER	.006	.005	.003	.003	.002	.003	.002	.003	.004	.003
LONDON	.007	.005	.009	.004	.003	.004	.002	.003	.003	.004
LONG POINT	.001	.006	.004	.003	.002	.002	.002	.002	.002	.002
MISSISSAUGA	.006	.005	.006	.006	.006	.006	.006	.007	.009	.004
NIAGARA FALLS	.011	.007	.004	.003	.003	.004	.003	.003	.002	.005
NORTH BAY	.003	.004	.002	.003	.002	.003	.002	.002	.002	.002
NORTH YORK	.009	.010	.010	.012	.006	.009	.008	.005	.002	.002
OAKVILLE	.009	.007	.005	.007	.005	.007	.006	.005	.003	.005
OSHAWA	.010	.007	.004	.004	.003	.005	.003	.003	.004	.006
OTTAWA	.006	.004	.005	.004	.002	.002	.002	.002	.001	.002
PETERBORO	.003	.004	.003	.003	.002	.003	.002	.002	.002	.002
SARNIA	.017	.013	.014	.012	.010	.009	.011	.008	.007	.009
SCARBORO	.005	.008	.007	.004	.003	.004	.003	.003	.004	.008
SIMCOE	009	.007	.004	.004	.003	.004	.005	.003	.003	.005
ST CATHARINES	.007	.004	.007	.005	.005	.005	.006	.005	.010	.011
STOUFFVILLE	.004	.003	.003	.003	.005	.005	.004	.002	.002	.003
SUDBURY *	.012	.016	.010	.010	.009	.010	.010	.008	.009	.010
THUNDER BAY	.001	.001	.001	.000	.000	.000	.000	.000	.000	.000
TIVERTON	.001	.003	.003	.001	.003	.007	.002	.001	.001	.003
TORONTO	.008	.007	.008	.006	.004	.006	.004	.004	.004	.007
WINDSOR	.013	.011	.012	.009	.008	.007	.007	.008	.008	.011

* change of location from Ash Street (77016) to Science Centre (77203)

TABLE A-7 SUSPENDED PARTICLES (SP) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
12008	467 UNIVERSITY AV W WINDSOR	315	0.03	0.19	0.30	0.46	0.82	1.73	0.44	4.4	1.4	11	0
12016	COLLEGE/SOUTH ST WINDSOR	354	0.07	0.18	0.26	0.39	0.68	1.52	0.39	4.4	1.2	2	0
12038	2885 HOWARD AV WINDSOR	345	0.08	0.23	0.38	0.57	1.03	2.24	0.54	4.5	2.0	23	1
12039	DOUGLAS ST/E.C. ROW W WINDSOR	340	0.11	0.22	0.34	0.48	0.81	1.76	0.47	4.1	1.6	8	0
12049	643 ALEXANDRINE WINDSOR	323	0.09	0.21	0.33	0.47	0.83	1.84	0.47	4.7	1.9	9	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	338	0.00	0.06	0.15	0.26	0.46	0.95	0.24	3.6	1.0	0	0
15001	MAN FAIR GROUNDS, KING/RECTORY LONDON	345	0.00	0.07	0.16	0.27	0.46	1.01	0.25	3.0	0.9	0	0
15009	LONGWOODS CONSERVATION AUTHORITY	301	0.00	0.00	0.04	0.09	0.20	0.39	0.11	1.6	0.4	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	91	0.00	0.00	0.05	0.14	0.29	0.65	0.14	2.1	0.6	0	INS
26029	EDNA/FREDERICK STS KITCHENER	178	0.05	0.16	0.28	0.49	1.01	2.27	0.48	4.9	1.8	11	INS
26045	WEBER/UNIVERSITY ST WATERLOO	205	0.00	0.05	0.12	0.20	0.37	0.63	0.20	1.7	0.8	0	INS
27052	185 QUEEN ST S THOROLD	288	0.02	0.13	0.24	0.38	0.64	1.22	0.35	3.9	1.0	0	0
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	288	0.03	0.16	0.28	0.44	0.77	1.45	0.40	5.0	1.2	5	0
27056	ALLENDALE AV NIAGARA FALLS	362	0.00	0.13	0.25	0.39	0.59	0.90	0.32	1.6	0.9	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	354	0.00	0.07	0.15	0.24	0.42	0.92	0.23	2.3	0.8	0	0

TABLE A-7 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
28028	EXHIBITION ST/CLARK ST GUELPH	317	0.00	0.05	0.11	0.19	0.36	0.78	0.20	2.5	0.8	0	0
29000	ELGIN/KELLY ST HAMILTON	361	0.06	0.19	0.30	0.46	0.89	1.91	0.46	4.5	2.2	20	0
29001	HUGHSON/HUNTER HAMILTON	346	0.09	0.23	0.37	0.56	1.04	2.18	0.54	3.6	2.3	24	1
29025	BARTON/WENTWORTH HAMILTON	361	0.07	0.22	0.36	0.55	0.96	1.83	0.51	3.0	1.6	19	1
29102	467 BEACH BLVD HAMILTON	210	0.00	0.08	0.20	0.35	0.64	1.22	0.31	2.7	1.0	0	INS
29105	NASH RD/KENTLEY DR HAMILTON	343	0.03	0.11	0.19	0.30	0.54	1.27	0.31	3.2	1.4	2	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	348	0.03	0.10	0.18	0.28	0.50	1.31	0.29	3.3	1.2	4	0
29118	MAIN ST W/HWY 403 HAMILTON	319	0.02	0.11	0.22	0.37	0.80	1.67	0.38	2.7	1.4	9	0
31049	MISSION, 381 YONGE ST TORONTO	287	0.12	0.28	0.45	0.70	1.20	2.23	0.63	4.3	1.8	26	1
31104	26 BREADALBANE TORONTO	356	0.04	0.15	0.23	0.35	0.59	1.18	0.34	2.9	1.0	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	360	0.03	0.16	0.26	0.39	0.69	1.55	0.38	3.0	1.3	2	0
31190	CN TOWER, 301 FRONT ST W TORONTO	213	0.00	0.00	0.05	0.10	0.23	0.48	0.12	1.2	0.4	0	INS
32010	LEASIDE HYDRO STATION EAST YORK	205	0.00	0.11	0.22	0.39	0.75	1.67	0.37	3.8	1.2	4	INS
33003	LAWRENCE/KENNEDY SCARBORO	356	0.00	0.15	0.26	0.41	0.70	1.43	0.37	2.9	1.4	2	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	212	0.01	0.09	0.21	0.38	0.67	1.34	0.34	2.2	1.2	2	INS

TABLE A-7 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1968 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT RUN DATE SEP 19, 1969

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
34025	35 EDGAR AVE NORTH YORK WEST	208	0.00	0.00	0.04	0.15	0.49	1.46	0.20	2.8	1.4	5	INS
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	191	0.00	0.17	0.33	0.54	0.97	2.33	0.49	4.3	1.6	14	INS
35033	EVANS/ARNOLD AV ETOBICOKE	331	0.00	0.14	0.29	0.48	0.86	1.79	0.43	3.4	1.6	7	0
36030	CLEARVIEW HTGS/KEELE ST YORK	212	0.07	0.18	0.28	0.42	0.79	2.03	0.43	3.2	1.4	5	INS
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	211	0.00	0.14	0.28	0.50	0.90	1.75	0.44	3.5	1.4	7	INS
44015	BRONTE RD/WOBURN CRES OAKVILLE	288	0.02	0.13	0.24	0.40	0.76	1.63	0.39	3.5	1.3	6	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	360	0.00	0.04	0.17	0.35	0.69	1.41	0.31	3.2	1.2	4	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	198	0.02	0.10	0.18	0.30	0.61	1.49	0.32	3.8	0.9	0	INS
51001	MCD GDS, RIDEAU/WURTEMBURG ST OTTAWA	362	0.00	0.02	0.13	0.24	0.49	1.11	0.23	3.7	1.1	1	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	356	0.00	0.00	0.00	0.07	0.25	0.80	0.10	2.4	1.5	2	0
63200	MTC 615 JAMES ST S THUNDER BAY	339	0.00	0.00	0.00	0.00	0.00	0.27	0.03	0.8	0.3	0	0
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	359	0.00	0.07	0.18	0.36	0.77	1.70	0.35	3.5	1.0	0	0
75010	OPP STN NORTH BAY	351	0.00	0.06	0.13	0.26	0.60	1.41	0.28	3.3	1.0	0	0
77016	WATER TANK, ASH ST SUDBURY	178	0.00	0.00	0.00	0.16	0.33	0.94	0.15	2.1	0.5	0	INS
77028	GOVERNMENT RD/EDWARD ST CONISTON	177	0.00	0.00	0.00	0.14	0.28	0.68	0.12	4.3	0.4	0	INS

TABLE A-7 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
77075	KENNEDY ST NEW SUDBURY	178	0.00	0.00	0.00	0.15	0.33	0.89	0.14	3.0	0.6	0	INS
77203	SCIENCE NORTH SUDBURY	358	0.00	0.05	0.11	0.19	0.38	0.86	0.21	2.0	0.8	0	0

Annual Mean (COH/1000 ft.)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	.20	.18	.10	.16	.18	.16	.09	.06	.04	.10
ETOBICOKE	.58	.42	.31	.49	.37	.52	.47	.54	.52	.43
HAMILTON	.63	.54	.58	.57	.44	.55	.52	.57	.55	.46
LONDON	.32	.33	.30	.32	.31	.29	.30	.30	.27	.25
NIAGARA FALLS	.25	.22	.25	.22	.20	.22	.20	.18	.20	.32
NORTH YORK	.55	.48	.54	.60	.57	.62	.56	-	-	.34
OSHAWA	.33	.31	.31	.41	.33	.40	.37	.33	.37	.31
OTTAWA	.23	.14	.18	.18	.18	.19	.14	.15	.19	.23
SARNIA	.30	.27	.28	.27	.27	.29	.25	.31	.29	.24
SCARBORO	.37	.35	.40	.37	.32	.36	.34	.34	.38	.37
SUDBURY *	.12	.13	.12	.12	.12	.15	.13	.16	.16	.21
ST CATHARINES	.37	.31	.32	.29	.27	.24	.26	.24	.27	.23
TORONTO	.39	.34	.45	.46	.41	.47	.36	.39	.38	.34
WINDSOR	.47	.42	.41	.43	.47	.46	.41	.43	.37	.44

* change of location from Ash Street (77016) to Science Centre (77203)

TABLE A-9 TOTAL REDUCED SULPHUR (TRS) STATISTICS (1988)

YEAR - 1988 ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH
POLLUTANT - TOTAL REDUCED SULPHUR UNIT = PARTS/BILLION
SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	EXCEEDANCES OF PULP MILL CRIT. 1HR
12007	WRIGHT/WATER ST WINDSOR	358	0.0	0.0	0.5	1.5	6.4	39.9	3.2	165	50	182
12016	COLLEGE/SOUTH ST WINDSOR	204	0.0	0.3	0.8	1.5	3.4	12.6	1.9	46	8	4
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	360	0.0	0.0	0.0	0.6	1.6	3.9	0.7	12	3	0
18007	CONCESSION RD 2 LOT A TIVERTON	262	0.0	0.0	0.0	0.4	1.6	3.3	0.6	7	4	0
22006	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	364	0.0	0.0	0.0	0.1	1.0	3.5	0.5	22	4	0
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	364	0.0	0.0	0.0	0.0	0.7	4.6	0.4	22	4	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	353	0.0	0.0	0.0	0.7	3.2	13.6	1.4	98	14	12
27052	185 QUEEN ST S THOROLD	327	0.0	0.5	1.6	3.2	17.3	60.8	6.2	169	55	517
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	336	0.0	0.3	1.7	3.2	9.6	33.8	4.1	67	28	144
29000	ELGIN/KELLY ST HAMILTON	362	0.0	0.0	0.0	0.4	1.6	6.4	0.8	21	6	0
29025	BARTON/WENTWORTH HAMILTON	210	0.0	0.0	0.0	0.5	2.0	7.7	0.9	16	6	0
29102	467 BEACH BLVD HAMILTON	351	0.0	0.3	1.1	2.4	5.4	14.7	2.5	54	12	9
29114	VICKERS RD/EAST 18TH ST HAMILTON	332	0.0	0.0	0.3	1.2	2.8	6.6	1.2	17	6	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	353	0.0	0.0	0.6	1.4	2.5	8.9	1.4	25	11	0
46117	MEADOW PK, APPLE LANE CLUB MISSISSAUGA	214	0.0	0.0	0.2	0.7	1.7	3.8	0.9	15	3	0

TABLE A-9 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - TOTAL REDUCED SULPHUR UNIT = PARTS/BILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	EXCEEDANCES OF PULP MILL CRIT. 1HR
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	364	0.0	0.3	1.0	1.9	4.3	21.8	2.5	140	22	61
56068	SCHOOL, 435 SECOND ST W CORNWALL	219	0.0	0.0	1.3	4.0	11.6	66.4	5.3	198	46	149
56071	ST. PETER'S SCHOOL CORNWALL	231	0.0	1.2	2.4	4.0	17.6	56.9	6.8	260	39	330
61027	35 VAN HORNE AV DRYDEN	323	0.0	0.0	0.0	0.0	0.9	5.6	0.4	45	5	1
62030	PORTAGE/CHURCH ST FORT FRANCES	359	0.0	0.0	0.2	4.2	22.9	73.7	5.9	268	45	552
62032	CEMETERY,COLONIZATION RD N FORT FRANCES	363	0.0	0.0	0.0	0.0	4.0	28.2	1.8	160	25	89
63034	PENINSULA BLDG MARATHON	327	0.0	0.0	0.0	0.0	6.5	30.6	2.2	67	22	109
63046	CAN-CAR, MONTREAL ST THUNDER BAY	361	0.0	0.0	0.0	0.2	2.6	11.3	1.0	36	10	4
63084	RECREATION CENTRE RED ROCK	350	0.0	0.0	0.0	0.2	7.9	40.4	2.9	201	39	184
63090	ST MARTIN SCHOOL TERRACE BAY	332	0.0	0.0	0.0	0.0	5.4	31.5	2.1	129	35	110
63200	MTC 615 JAMES ST S THUNDER BAY	353	0.0	0.0	0.0	0.0	0.0	2.7	0.2	13	2	0
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	320	0.0	0.0	0.0	0.0	0.7	3.3	0.4	20	6	0
72084	ROSS RD SMOOTH ROCK FALLS	254	0.0	0.0	0.4	0.7	1.6	11.8	1.2	60	11	16
77203	SCIENCE NORTH SUDBURY	315	0.0	0.0	0.0	0.0	0.7	1.8	0.3	9	2	0

TABLE A-10 10-YEAR TREND FOR TRS

	Annual Mean (ppb)									
City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	3.1	2.8	1.8	2.0	3.4	1.5	.8	2.6	4.3	2.5
FORT FRANCES	10.2	9.3	12.0	8.8	4.9	2.8	2.0	3.9	5.5	5.9
HAMILTON	2.4	.9	1.3	1.2	1.4	1.8	1.4	1.4	.9	0.8
THUNDER BAY	2.6	2.9	2.8	1.0	.5	.6	.8	1.0	.8	1.0

TABLE A-11 CARBON MONOXIDE (CO) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - CARBON MONOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	8HR	NO. OF TIMES ABOVE CRITERIA 1HR	8HR
12008	467 UNIVERSITY AV W WINDSOR	361	0.0	0.0	0.4	0.8	1.4	2.7	0.9	9	4	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	355	0.0	0.0	0.0	0.0	0.7	1.8	0.3	11	3	0	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	365	0.0	0.0	0.0	0.3	0.9	2.6	0.5	10	5	0	0
26029	EDNA/FREDERICK STS KITCHENER	349	0.0	0.0	0.3	0.7	1.5	3.5	0.9	9	5	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	297	0.0	0.1	0.4	0.7	1.3	3.0	1.0	8	6	0	0
29000	ELGIN/KELLY ST HAMILTON	362	0.0	0.3	0.6	0.9	1.6	3.0	1.2	11	5	0	0
29102	467 BEACH BLVD HAMILTON	325	0.0	0.0	0.1	0.5	1.0	2.2	0.7	17	10	0	0
31049	MISSION, 381 YONGE ST TORONTO	345	0.3	1.0	1.7	2.6	4.7	11.1	2.8	22	17	0	6
31104	26 BREADALBANE TORONTO	340	0.0	0.0	0.1	0.5	1.0	2.6	0.6	9	6	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	360	0.0	0.0	0.2	0.6	1.2	3.1	0.8	9	8	0	0
31190	CN TOWER, 301 FRONT ST W TORONTO	259	0.0	0.0	0.0	0.4	0.8	1.0	0.5	9	2	0	0
32010	LEASIDE HYDRO STATION EAST YORK	204	0.0	0.1	0.4	0.8	1.6	3.5	1.0	8	5	0	0
33003	LAWRENCE/KENNEDY SCARBORO	364	0.0	0.0	0.4	0.8	1.6	3.3	1.0	8	6	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	353	0.0	0.0	0.3	0.6	1.0	2.3	0.8	6	4	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	211	0.0	0.0	0.2	0.6	1.3	3.6	0.8	10	6	0	0

TABLE A-11 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - CARBON MONOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	8HR	NO. OF TIMES ABOVE CRITERIA 1HR	8HR
34025	35 EDGAR AVE NORTH YORK WEST	212	0.0	0.3	0.6	0.9	1.8	3.8	1.2	9	6	0	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	307	0.0	0.0	0.4	0.8	1.9	7.6	1.2	11	11	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	363	0.0	0.0	0.4	0.7	1.3	4.4	0.9	14	11	0	0
36030	CLEARVIEW HTGS/KEELE ST YORK	210	0.0	0.1	0.4	0.7	1.3	4.6	1.0	10	9	0	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	353	0.0	0.0	0.2	0.5	0.9	1.9	0.7	9	3	0	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	354	0.0	0.0	0.2	0.5	0.9	2.0	0.7	8	6	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	365	0.0	0.2	0.5	0.8	1.5	3.8	1.1	14	5	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	359	0.0	0.1	0.5	0.8	1.4	3.6	1.0	16	9	0	0
51001	MCD GDS, RIDEAU/WURTEMBURG ST OTTAWA	358	0.0	0.0	0.0	0.3	0.8	1.9	0.5	7	3	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	356	0.0	0.0	0.0	0.4	0.9	2.5	0.6	8	5	0	0
63200	MTC 615 JAMES ST S THUNDER BAY	359	0.0	0.0	0.0	0.0	0.8	2.1	0.4	6	3	0	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	322	0.0	0.0	0.1	0.5	1.0	3.4	0.7	12	7	0	0
75010	OPP STN NORTH BAY	335	0.0	0.0	0.0	0.0	0.7	1.7	0.3	5	3	0	0
77203	SCIENCE NORTH SUDBURY	50	0.0	0.0	0.0	0.1	0.7	1.9	0.4	3	3	0	0

TABLE A-12 10-YEAR TREND FOR CO

	Annual Mean (ppm)									
City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	.9	1.1	1.1	1.0	.2	.2	.2	.2	.3	.6
ETOBICOKE	1.3	1.1	1.0	1.1	1.6	1.4	1.3	1.2	1.2	1.2
HAMILTON	1.5	.9	1.2	1.1	.9	.8	1.2	1.1	1.2	1.2
KITCHENER	1.0	1.1	1.1	1.0	1.0	.9	.8	.9	.8	.9
LONDON	.4	.3	.4	.3	.3	.4	.3	.3	.4	.5
NORTH YORK	1.6	1.4	1.7	2.3	-	1.3	1.4	1.3	1.2	.8
OAKVILLE	1.3	1.2	2.3	1.4	1.3	0.9	1.0	1.0	.8	.9
OSHAWA	1.2	1.8	2.0	1.9	2.0	1.8	1.0	1.2	.8	1.1
OTTAWA	1.0	1.2	1.3	.9	.2	.3	.6	.6	.3	.5
SARNIA	.3	.3	.2	.2	.1	.1	.2	.2	.2	.3
SCARBORO	1.5	1.5	1.4	1.6	1.2	1.4	1.3	1.0	1.1	1.0
ST CATHARINES	.9	.6	1.0	.4	.4	.4	.2	.2	-	1.0
SUDBURY *	.2	.1	.1	.1	.1	.1	.1	.1	.1	.3
TORONTO	1.5	-	1.3	1.5	1.1	1.0	1.1	1.0	1.1	.6
WINDSOR	2.0	1.7	1.1	.5	.8	.5	.5	.5	.7	.9

* change of location from Ash Street (77016) to Science Centre (77203)

TABLE A-13 TOTAL HYDROCARBON (THC) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - TOTAL HYDROCARBONS UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	322	1.89	2.01	2.11	2.26	2.54	3.31	2.23	5.3	3.0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	355	1.54	1.69	1.84	2.03	2.43	3.60	1.99	8.8	3.3
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	238	1.63	1.85	2.02	2.22	2.71	4.17	2.18	7.9	3.5
22071	EXPERIMENTAL FARM SIMCOE	211	1.46	1.68	1.75	1.80	1.91	2.11	1.71	8.1	2.1
22904	HALPOLE S PS, SANDUSK RD NANTICOKE	208	1.54	1.65	1.72	1.78	1.90	2.33	1.72	5.8	2.1
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	203	1.43	1.54	1.61	1.68	1.79	2.04	1.61	3.2	2.1
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	93	1.23	1.58	1.67	1.76	2.03	3.97	1.67	7.4	3.2
29000	ELGIN/KELLY ST HAMILTON	182	1.69	1.77	1.84	1.92	2.17	2.93	1.95	4.5	3.1
29102	467 BEACH BLVD HAMILTON	204	1.40	1.74	1.92	2.08	2.30	2.94	1.89	5.1	2.9
31104	26 BREADALBANE TORONTO	359	1.53	1.76	1.93	2.09	2.44	3.32	2.01	8.5	3.3
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	314	1.17	1.56	1.75	1.93	2.34	3.62	1.80	7.5	3.9
33003	LAWRENCE/KENNEDY SCARBORO	358	1.91	2.05	2.15	2.28	2.63	3.78	2.25	9.6	3.6
34002	SC CTR, 770 DON MILLS RD NORTH YORK	180	1.43	1.85	2.26	2.73	3.63	5.02	2.46	13.7	4.9
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	309	1.63	1.81	2.01	2.24	2.93	6.78	2.27	12.9	5.9
35033	EVANS/ARNOLD AV ETOBICOKE	192	1.71	1.85	1.98	2.14	2.57	4.05	2.11	9.3	3.6

TABLE A-13 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
SEP 19, 1989

YEAR - 1988 POLLUTANT - TOTAL HYDROCARBONS UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
44015	BRONTE RD/HOBURN CRES OAKVILLE	325	1.22	1.53	1.75	2.01	2.58	4.97	1.92	8.5	6.5
46117	MEADOW PK, APPLE LANE CLUB MISSISSAUGA	106	0.90	1.87	2.41	3.03	4.31	5.78	2.57	8.7	5.5

TABLE A-14 10-YEAR TREND FOR THC

	Annual Mean (ppm)									
City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
ETOBICOKE	2.29	2.17	2.19	2.28	2.58	2.23	2.39	2.31	1.86	2.11
LONDON	2.30	2.41	2.36	2.48	2.57	2.89	2.85	2.80	2.99	2.18
NORTH YORK	1.67	1.48	1.68	2.11	2.31	2.19	2.18	2.28	1.72	2.46
SARNIA	1.99	1.86	2.09	2.12	2.02	2.04	1.93	1.62	2.00	1.99
SCARBORO	1.64	1.54	2.00	1.83	1.90	2.08	2.39	2.20	2.31	2.25
TORONTO	1.32	1.43	1.71	1.66	1.37	1.89	1.76	1.61	1.79	2.01
WINDSOR	1.86	2.22	2.18	2.12	2.09	2.29	2.08	2.15	2.29	2.23

TABLE A-15 REACTIVE HYDROCARBON (RHC) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - REACTIVE HYDROCARBONS UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	324	0.14	0.21	0.26	0.31	0.42	0.76	0.33	1.5	0.6
22071	EXPERIMENTAL FARM SIMCOE	346	0.01	0.05	0.09	0.14	0.19	0.28	0.15	0.7	0.3
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	340	0.00	0.05	0.10	0.15	0.19	0.63	0.16	1.8	0.7
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	357	0.00	0.03	0.05	0.08	0.12	0.20	0.11	0.6	0.2
29000	ELGIN/KELLY ST HAMILTON	182	0.01	0.05	0.08	0.13	0.23	0.58	0.16	1.3	0.6
29102	467 BEACH BLVD HAMILTON	329	0.02	0.08	0.20	0.29	0.45	0.69	0.26	1.3	0.8

TABLE A-16 NITROGEN DIOXIDE (NO_2) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	357	.008	.016	.022	.030	.045	.070	.030	.16	.06	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	326	.000	.002	.007	.015	.029	.049	.015	.09	.05	0	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	362	.000	.007	.013	.020	.032	.052	.020	.08	.05	0	0
15013	PUC BLDG PARKHILL	346	.000	.000	.003	.007	.015	.028	.008	.05	.03	0	0
22071	EXPERIMENTAL FARM SIMCOE	328	.000	.000	.003	.006	.012	.028	.008	.06	.03	0	0
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	358	.000	.000	.002	.006	.010	.025	.007	.07	.03	0	0
22901	PROVINCIAL PARK LONG POINT	357	.000	.002	.006	.009	.017	.029	.011	.07	.04	0	0
26029	EDNA/FREDERICK STS KITCHENER	343	.005	.013	.020	.028	.039	.060	.027	.14	.08	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	254	.000	.006	.011	.018	.029	.049	.018	.08	.05	0	0
29000	ELGIN/KELLY ST HAMILTON	362	.003	.011	.017	.024	.036	.060	.024	.13	.07	0	0
29102	467 BEACH BLVD HAMILTON	350	.000	.012	.021	.028	.038	.060	.025	.11	.06	0	0
29118	MAIN ST W/HWY 403 HAMILTON	346	.001	.007	.013	.020	.036	.060	.021	.11	.06	0	0
31049	MISSION, 381 YONGE ST TORONTO	348	.007	.017	.025	.034	.048	.081	.032	.19	.10	0	0
31104	26 BREADALBANE TORONTO	355	.004	.013	.019	.026	.038	.064	.026	.20	.08	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	356	.003	.016	.023	.031	.046	.075	.030	.13	.07	0	0

TABLE A-16 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
31190	CN TOWER, 301 FRONT ST W TORONTO	342	.000	.000	.000	.005	.013	.031	.007	.10	.03	0	0
32010	LEASIDE HYDRO STATION EAST YORK	206	.005	.014	.022	.030	.045	.076	.029	.19	.09	0	0
33003	LAWRENCE/KENNEDY SCARBORO	362	.002	.011	.018	.026	.039	.068	.025	.11	.06	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	354	.011	.016	.022	.027	.036	.051	.027	.14	.06	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	214	.000	.005	.012	.020	.034	.061	.019	.10	.05	0	0
34025	35 EDGAR AVE NORTH YORK WEST	289	.013	.020	.027	.038	.061	.096	.038	.14	.09	0	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	311	.000	.007	.014	.022	.034	.057	.021	.17	.07	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	363	.008	.018	.026	.034	.052	.083	.033	.15	.09	0	0
36030	CLEARVIEW HTGS/KEELE ST YORK	213	.005	.013	.019	.027	.039	.071	.027	.17	.07	0	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	357	.004	.011	.016	.022	.033	.050	.023	.10	.05	0	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	290	.000	.004	.009	.016	.027	.048	.016	.10	.04	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	365	.001	.009	.017	.026	.039	.067	.024	.14	.07	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	336	.003	.009	.014	.020	.030	.052	.021	.09	.05	0	0
48002	HWY47/E OF HWY48 STOUFFVILLE	352	.001	.005	.009	.015	.025	.040	.016	.08	.05	0	0
49010	HWY 117/PAINT LAKE RD DORSET	281	.000	.000	.000	.000	.006	.016	.002	.07	.01	0	0

TABLE A-16 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	360	.000	.002	.008	.016	.029	.057	.016	.11	.08	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.000	.001	.006	.016	.036	.008	.09	.03	0	0
63200	MTC 615 JAMES ST S THUNDER BAY	358	.000	.001	.005	.010	.023	.044	.012	.09	.04	0	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	301	.000	.002	.007	.013	.025	.045	.014	.08	.03	0	0
75010	OPP STN NORTH BAY	357	.000	.000	.003	.008	.020	.040	.010	.08	.03	0	0
77203	SCIENCE NORTH SUDBURY	359	.000	.000	.004	.008	.017	.037	.010	.17	.03	0	0

TABLE A-17 10-YEAR TREND FOR NO_2

	Annual Mean (ppm)									
City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	.011	.011	.011	.010	.011	.011	.010	.011	.010	.008
ETOBICOKE	.022	.018	.022	.021	.021	.024	.026	.027	.028	.021
HAMILTON	.029	.027	.029	.031	.029	.029	.025	.027	.026	.024
KITCHENER	.030	.026	.026	.028	.025	.027	.029	.032	.026	.027
LONDON	.030	.020	.017	.021	.021	.024	.025	.026	.021	.020
MISSISSAUGA	.029	.027	.029	.026	.026	.026	.026	.026	.025	.021
NORTH YORK	.023	.020	.014	.022	.023	.026	.027	.023	.025	.027
OAKVILLE	.022	.023	.020	.018	.016	.018	.016	.020	.017	.016
OSHAWA	.019	.019	.019	.020	.019	.021	.020	.021	.022	.024
OTTAWA	.012	.017	.016	.015	.014	.014	.012	.012	.015	.016
SARNIA	.019	.022	.018	.022	.020	.023	.019	.021	.012	.015
SCARBORO	.027	.030	.025	.025	.019	.018	.018	.022	.022	.025
SIMCOE	.010	.012	.014	.010	.009	.009	.006	.005	.005	.008
ST CATHARINES	.026	.020	.022	.019	.020	.018	.017	.019	-	.018
SUDBURY	.006	.006	.007	.006	.006	.006	.007	.010	.011	.010
TORONTO	.029	.028	.025	.027	.025	.027	.026	.027	.025	.025
WINDSOR	.033	.031	.030	.029	.026	.027	.026	.025	.027	.030

TABLE A-18 NITRIC OXIDE (NO) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	362	.000	.000	.003	.009	.029	.116	.014	0.52	0.09
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	327	.000	.000	.000	.002	.014	.058	.006	0.48	0.06
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	363	.000	.000	.004	.009	.029	.130	.015	0.34	0.10
15013	PUC BLDG PARKHILL	354	.000	.000	.000	.004	.008	.010	.005	0.08	0.01
22071	EXPERIMENTAL FARM SIMCOE	328	.000	.000	.000	.000	.005	.016	.002	0.09	0.02
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	355	.000	.000	.000	.000	.006	.019	.003	0.21	0.03
22901	PROVINCIAL PARK LONG POINT	355	.000	.000	.000	.000	.000	.023	.001	0.07	0.04
26029	EDNA/FREDERICK STS KITCHENER	348	.000	.002	.012	.035	.125	.370	.047	0.99	0.35
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	208	.000	.000	.000	.001	.016	.178	.010	0.58	0.13
29000	ELGIN/KELLY ST HAMILTON	335	.000	.000	.001	.010	.038	.168	.017	0.56	0.23
29102	467 BEACH BLVD HAMILTON	356	.000	.000	.008	.023	.053	.138	.023	0.31	0.12
29118	MAIN ST W/HWY 403 HAMILTON	350	.000	.000	.006	.017	.073	.285	.029	0.91	0.24
31049	MISSION, 381 YONGE ST TORONTO	354	.010	.026	.046	.079	.147	.304	.071	0.82	0.31
31104	26 BREADALBANE TORONTO	364	.000	.000	.006	.014	.036	.134	.018	0.52	0.18
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	362	.000	.000	.001	.009	.040	.190	.018	0.70	0.24

TABLE A-18 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
31190	CN TOWER, 301 FRONT ST W TORONTO	343	.000	.000	.000	.000	.003	.032	.002	0.95	0.06
32010	LEASIDE HYDRO STATION EAST YORK	206	.000	.005	.012	.030	.091	.303	.038	0.72	0.22
33003	LAWRENCE/KENNEDY SCARBORO	360	.000	.003	.013	.029	.075	.244	.033	0.63	0.17
34002	SC CTR, 770 DON MILLS RD NORTH YORK	324	.000	.000	.004	.011	.049	.205	.021	0.74	0.20
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	214	.000	.002	.007	.016	.058	.220	.025	0.43	0.20
34025	35 EDGAR AVE NORTH YORK WEST	209	.000	.005	.017	.045	.108	.316	.045	0.53	0.30
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	317	.000	.000	.005	.016	.058	.269	.026	0.88	0.25
35033	EVANS/ARNOLD AV ETOBICOKE	360	.000	.010	.026	.049	.108	.307	.050	0.71	0.24
36030	CLEARVIEW HTGS/KEELE ST YORK	211	.000	.001	.007	.018	.069	.347	.032	0.74	0.28
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	342	.000	.000	.002	.013	.040	.169	.018	0.63	0.13
44015	BRONTE RD/WOBURN CRES OAKVILLE	353	.000	.000	.004	.013	.038	.168	.018	0.60	0.15
45025	PS, RITSON RD/OLIVE AV OSHAWA	356	.000	.000	.000	.006	.036	.140	.014	0.37	0.10
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	341	.000	.001	.008	.019	.054	.225	.026	0.75	0.24
48002	HWY47/E OF HWY48 STOUFFVILLE	315	.000	.000	.005	.016	.031	.090	.016	0.26	0.10
49010	HWY 117/PAINT LAKE RD DORSET	366	.000	.000	.000	.000	.000	.009	.001	0.05	0.01

TABLE A-18 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	360	.000	.000	.000	.002	.026	.131	.011	0.64	0.12
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.000	.002	.006	.010	.099	.010	0.42	0.10
63200	MTC 615 JAMES ST S THUNDER BAY	357	.000	.000	.001	.007	.024	.119	.012	0.30	0.08
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	301	.000	.001	.005	.009	.023	.086	.013	0.21	0.05
75010	OPP STN NORTH BAY	357	.000	.000	.004	.009	.030	.131	.015	0.31	0.07
77203	SCIENCE NORTH SUDBURY	359	.000	.000	.000	.002	.009	.048	.005	0.24	0.05

TABLE A-19 10-YEAR TREND FOR NO

Annual Mean (ppm)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	.009	.007	.006	.005	.008	.007	.008	.005	.011	.010
ETOBICOKE	.027	.019	.026	.027	.026	.026	.027	.031	.028	.026
HAMILTON	.030	.021	.024	.024	.018	.023	.019	.022	.014	.017
KITCHENER	.044	.037	.058	.038	.045	.046	.047	.051	.051	.047
LONDON	.018	.016	.018	.015	.014	.017	.013	.019	.018	.015
MISSISSAUGA	.032	.026	.027	.025	.027	.028	.030	.032	.030	.026
NORTH YORK	.034	.028	.050	.036	.030	.027	.028	.022	.026	.021
OAKVILLE	.018	.020	.020	.015	.012	.017	.016	.020	.018	.018
OSHAWA	.020	.017	.017	.017	.013	.023	.017	.016	.019	.014
OTTAWA	.026	.013	.015	.013	.009	.012	.011	.010	.012	.011
SARNIA	.017	.010	.014	.009	.010	.008	.007	.009	.006	.006
SCARBORO	.037	.029	.034	.028	.028	.033	.032	.032	.035	.033
SIMCOE	.003	.001	.002	.002	.002	.005	.004	.007	.005	.002
ST CATHARINES	.022	.009	.014	.008	.009	.016	.009	.008	-	.010
SUDBURY	.006	.005	.006	.007	.005	.007	.010	.008	.008	.005
TORONTO	.019	.016	.023	.022	.019	.021	.019	.022	.021	.018
WINDSOR	.021	.019	.017	.011	.016	.028	.015	.021	.014	.014

TABLE A-20 TOTAL NITROGEN OXIDE (NO_X) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	355	.011	.021	.030	.044	.075	.172	.044	0.59	0.16
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	325	.000	.003	.009	.020	.044	.098	.021	0.57	0.09
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	362	.002	.012	.022	.034	.062	.168	.035	0.38	0.13
15013	PUC BLDG PARKHILL	212	.000	.001	.005	.008	.017	.032	.010	0.09	0.03
22071	EXPERIMENTAL FARM SIMCOE	328	.000	.000	.004	.008	.017	.041	.010	0.13	0.04
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	354	.000	.000	.004	.009	.018	.048	.012	1.31	0.34
22901	PROVINCIAL PARK LONG POINT	354	.000	.002	.006	.010	.019	.043	.013	0.34	0.06
26029	EDNA/FREDERICK STS KITCHENER	340	.008	.023	.038	.066	.160	.413	.073	1.03	0.40
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	211	.001	.006	.014	.024	.047	.232	.029	0.71	0.16
29000	ELGIN/KELLY ST HAMILTON	335	.004	.014	.024	.038	.076	.216	.041	0.64	0.28
29102	467 BEACH BLVD HAMILTON	350	.000	.017	.038	.058	.090	.185	.048	0.78	0.21
29118	MAIN ST W/HWY 403 HAMILTON	347	.003	.013	.024	.045	.116	.338	.052	0.98	0.29
31049	MISSION, 381 YONGE ST TORONTO	344	.028	.052	.078	.117	.193	.361	.104	0.89	0.35
31104	26 BREADALBANE TORONTO	357	.008	.021	.030	.044	.074	.197	.044	0.57	0.30
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	355	.007	.019	.030	.045	.085	.238	.047	0.81	0.31

TABLE A-20 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
31190	CN TOWER, 301 FRONT ST W TORONTO	341	.000	.000	.000	.006	.018	.062	.009	1.00	0.07
32010	LEASIDE HYDRO STATION EAST YORK	205	.011	.025	.043	.068	.134	.358	.067	0.76	0.27
33003	LAWRENCE/KENNEDY SCARBORO	360	.004	.021	.039	.060	.114	.293	.058	0.69	0.22
34002	SC CTR, 770 DON MILLS RD NORTH YORK	315	.012	.022	.032	.045	.085	.241	.049	0.80	0.24
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	214	.003	.012	.026	.046	.094	.253	.046	0.48	0.23
34025	35 EDGAR AVE NORTH YORK WEST	208	.000	.016	.038	.077	.150	.359	.068	0.59	0.33
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	312	.003	.013	.023	.039	.088	.318	.046	1.05	0.30
35033	EVANS/ARNOLD AV ETOBICOKE	360	.017	.038	.060	.089	.160	.403	.085	0.80	0.39
36030	CLEARVIEW HTGS/KEELE ST YORK	213	.012	.022	.033	.050	.112	.396	.060	0.80	0.33
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	342	.006	.016	.026	.040	.070	.209	.041	0.65	0.16
44015	BRONTE RD/WOBURN CRES OAKVILLE	285	.000	.010	.021	.035	.069	.211	.036	0.62	0.17
45025	PS, RITSON RD/OLIVE AV OSHAWA	356	.000	.009	.020	.037	.078	.189	.036	0.48	0.14
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	333	.006	.017	.028	.044	.084	.265	.047	0.77	0.27
46002	HWY47/E OF HWY48 STOUFFVILLE	314	.002	.010	.022	.035	.057	.120	.032	0.28	0.12
49010	HWY 117/PAINT LAKE RD DORSET	299	.000	.000	.000	.000	.007	.017	.003	0.08	0.02

TABLE A-20 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
51001	MCD GDS, RIDEAU/MURTENBURG ST OTTAWA	360	.000	.003	.010	.023	.058	.178	.026	0.65	0.21
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.002	.007	.013	.029	.132	.017	0.47	0.12
63200	MTC 615 JAMES ST S THUNDER BAY	357	.000	.005	.011	.021	.049	.154	.025	0.38	0.10
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	301	.002	.008	.016	.026	.049	.123	.027	0.25	0.08
75010	OPP STN NORTH BAY	357	.000	.003	.010	.020	.053	.172	.025	0.38	0.10
77203	SCIENCE NORTH SUDBURY	359	.000	.002	.006	.012	.026	.083	.015	0.30	0.07

TABLE A-21 OZONE (O_3) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - OZONE UNIT = PARTS/BILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITHMETIC MEAN	MAXIMUM 1HR	MAXIMUM 24HR	NO. OF TIMES ABOVE CRITERIA 1HR
10001	COLLEGE OF AGRIC TECH HURON PARK	361	10.5	19.6	25.9	32.7	52.5	93.3	29.7	127	82	228
12008	467 UNIVERSITY AV W WINDSOR	353	2.2	7.7	15.8	25.8	49.4	92.1	21.9	159	86	223
12016	COLLEGE/SOUTH ST WINDSOR	213	0.6	5.5	14.0	27.3	59.4	100.7	23.0	154	87	206
13021	MOE WATER PUMP STN, MIDDLE RD MERLIN	357	11.2	19.9	26.4	34.6	57.1	102.5	31.5	133	90	362
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	354	3.0	12.4	20.4	27.6	40.3	85.4	22.6	131	64	125
14118	CONCESSION RD 26 MAUDAUMIA	350	10.4	20.0	26.6	34.2	49.8	95.0	30.0	146	87	239
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	355	3.0	12.1	19.5	27.2	47.6	89.9	23.7	137	75	174
15013	PUC BLDG PARKHILL	346	6.8	16.3	22.9	29.3	48.6	96.4	26.5	124	88	204
18007	CONCESSION RD 2 LOT A TIVERTON	360	15.8	25.6	31.5	37.2	54.6	102.0	34.6	143	93	331
22071	EXPERIMENTAL FARM SIMCOE	348	10.2	19.0	25.4	34.2	58.6	105.7	31.2	190	123	354
22901	PROVINCIAL PARK LONG POINT	351	15.7	25.0	31.8	40.7	68.5	121.6	38.3	189	118	566
26029	EDNA/FREDERICK STS KITCHENER	348	2.1	10.5	17.5	24.1	44.0	90.3	21.6	118	88	172
26045	WEBER/UNIVERSITY ST WATERLOO	199	2.2	10.2	16.8	25.3	47.9	82.7	21.9	122	77	62
27056	ALLENDALE AV NIAGARA FALLS	215	5.1	14.2	21.8	30.9	57.0	103.2	27.6	139	94	207
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	341	2.7	12.3	19.8	27.8	47.9	85.8	23.7	132	77	123

TABLE A-21 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - OZONE UNIT = PARTS/BILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
28028	EXHIBITION ST/CLARK ST GUELPH	349	2.6	13.0	21.3	29.0	45.2	88.4	24.0	117	70	138
29000	ELGIN/KELLY ST HAMILTON	362	0.0	5.7	13.0	20.9	40.0	90.5	17.9	137	79	144
29105	NASH RD/KENTLEY DR HAMILTON	348	0.4	9.3	16.7	24.7	43.6	84.1	20.5	128	80	99
29114	VICKERS RD/EAST 18TH ST HAMILTON	353	0.0	7.5	15.3	23.8	42.9	87.7	19.8	131	85	156
29118	MAIN ST W/HWY 403 HAMILTON	356	0.0	4.7	13.3	21.6	42.3	93.3	18.2	131	89	192
31104	26 BREADALBANE TORONTO	355	1.5	6.5	12.8	20.2	36.8	83.4	17.5	159	68	110
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	356	0.5	5.9	13.9	22.2	36.8	85.2	17.9	178	66	112
31190	CN TOWER, 301 FRONT ST W TORONTO	349	5.4	19.1	27.6	36.6	57.5	107.7	31.3	196	126	373
32010	LEASIDE HYDRO STATION EAST YORK	208	0.0	3.7	10.4	18.5	36.9	74.1	15.4	98	47	27
33003	LAWRENCE/KENNEDY SCARBORO	356	0.0	6.1	13.6	21.3	37.9	84.9	17.7	162	62	106
34002	SC CTR, 770 DON MILLS RD NORTH YORK	317	0.3	2.9	6.8	11.6	18.4	37.2	9.0	78	28	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	214	1.9	6.2	13.4	24.9	50.1	98.8	21.2	177	73	150
34025	35 EDGAR AVE NORTH YORK WEST	212	0.0	2.2	9.7	20.3	38.2	92.6	15.9	124	63	84
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	292	0.0	5.4	14.8	24.0	41.8	96.8	19.3	148	69	154
35033	EVANS/ARNOLD AV ETOBICOKE	350	0.1	3.1	8.6	15.8	31.2	74.5	13.5	157	58	68

TABLE A-21 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - OZONE UNIT = PARTS/BILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
36030	CLEARVIEW HTGS/KEELE ST YORK	212	2.7	6.0	13.4	23.1	47.5	97.7	20.6	159	68	144
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	343	0.8	9.1	15.8	22.4	36.8	68.1	18.5	151	65	38
44015	BRONTE RD/MOBURN CRES OAKVILLE	364	0.0	9.1	17.8	25.7	42.4	89.7	20.8	183	74	141
45025	PS, RITSON RD/OLIVE AV OSHAWA	347	2.0	9.4	17.1	24.2	37.8	89.2	20.2	185	76	138
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	352	0.5	6.5	13.2	20.6	38.1	83.4	17.7	177	66	108
47035	509 VICTORIA ST E ALLISTON	359	5.8	16.5	24.6	32.6	44.8	82.2	26.5	177	83	99
48002	HWY47/E OF HWY48 STOUFFVILLE	356	6.6	17.3	23.6	30.1	48.0	86.5	26.6	161	85	153
49010	HWY 117/PAINT LAKE RD DORSET	333	12.7	22.2	28.8	35.4	48.2	84.5	30.9	117	72	121
51001	NCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	356	3.4	9.9	17.0	25.3	41.0	73.8	20.7	127	87	57
52020	CHURCHILL PK, NAPIER ST KINGSTON	134	0.0	0.0	1.1	21.4	39.3	98.7	15.2	140	91	85
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	4.0	13.6	21.3	30.2	43.1	78.3	24.0	127	91	77
59006	CITY HALL, 500 GEORGE ST PETERBORO	324	5.4	14.1	20.7	27.5	40.7	78.3	23.4	168	73	66
63100	HANKEYE LAKE	276	11.8	21.8	28.5	36.0	50.6	74.0	30.5	95	70	10
63200	MTC 615 JAMES ST S THUNDER BAY	353	0.6	10.0	18.6	26.2	36.1	57.1	19.4	77	61	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	338	5.1	14.7	22.4	29.1	38.6	68.0	23.3	87	64	16

TABLE A-21 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - OZONE UNIT = PARTS/BILLION RUN DATE SEP 19, 1989

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
75010	OPP STN NORTH BAY	357	8.2	19.0	26.0	32.1	45.4	83.7	27.8	109	81	119
77016	WATER TANK, ASH ST SUDBURY	169	7.3	15.6	20.5	25.2	35.7	69.5	22.2	84	69	3
77203	SCIENCE NORTH SUDBURY	332	11.2	21.0	27.7	33.8	47.1	81.2	29.5	113	79	91

TABLE A-22 10-YEAR TREND FOR O_3

	Annual Mean (ppb)									
City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CORNWALL	23.4	24.8	22.7	21.5	22.7	27.6	25.8	22.8	20.8	24.0
ETOBICOKE	11.0	13.4	14.5	15.6	15.7	16.5	18.1	16.7	16.0	19.3
HAMILTON	15.3	17.4	16.3	16.9	18.7	18.0	19.0	16.4	16.2	17.9
HURON PARK	25.9	23.6	23.9	23.4	24.2	26.5	26.5	26.1	25.9	29.7
KITCHENER	20.5	20.7	18.8	17.8	18.9	18.3	19.9	17.0	17.1	21.6
LONDON	16.6	18.5	19.8	21.3	21.0	19.4	21.3	18.4	19.4	23.7
LONG POINT	30.5	32.7	31.3	34.1	29.9	31.2	34.4	31.4	31.7	38.4
MANDAUMIN	27.2	22.3	23.4	22.5	19.1	25.9	27.9	23.1	25.9	30.0
MERLIN	24.7	23.6	23.8	25.3	22.6	21.0	22.0	19.8	27.3	31.5
MISSISSAUGA	15.3	15.7	14.4	14.2	16.6	15.4	16.0	15.7	14.5	17.7
NORTH YORK	13.1	16.3	15.6	14.5	18.3	15.5	11.8	7.4	8.9	9.0
OAKVILLE	-	23.0	17.3	16.0	18.1	16.7	19.6	18.5	19.8	20.9
OSHAWA	17.5	17.1	17.8	18.8	21.1	17.1	18.2	17.2	17.9	20.2
OTTAWA	17.2	15.4	15.2	17.1	17.6	17.8	19.2	17.3	16.1	20.7
SARNIA	23.2	21.6	21.3	22.7	23.0	23.3	22.9	20.9	21.8	22.6
SCARBORO	14.4	13.8	13.3	14.8	16.7	14.9	13.9	16.6	16.8	17.7
SIMCOE	28.1	26.3	28.9	32.3	30.0	28.7	30.6	27.6	28.4	31.2
ST CATHARINES	18.8	20.8	20.0	21.2	23.2	20.3	17.9	21.9	-	23.6
STOUFFVILLE	24.2	22.8	19.4	22.7	20.5	21.0	23.3	20.0	22.9	26.6
SUDBURY *	18.3	13.9	15.6	16.0	14.2	15.8	13.4	17.1	19.4	29.5
TIVERTON	24.2	24.2	29.0	26.8	27.3	27.3	34.6	27.5	33.0	34.6
TORONTO	17.3	16.4	15.7	15.3	14.3	16.7	17.1	16.2	15.4	17.5
WINDSOR	15.7	19.9	18.8	18.1	18.7	18.9	19.7	17.4	17.6	23.5

* change of location from Ash Street (77016) to Science Centre (77203)

TABLE A-23 TOTAL SUSPENDED PARTICULATE (TSP) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
10015	PUC BLDG, 64 WEST ST GODERICH	54	22	32	46	55	94	138	144	52	45	3	0
11001	309 THOMAS ST ST MARYS	56	13	44	52	71	178	244	260	74	51	11	0
12002	CITY HALL, 444 WINDSOR AV WINDSOR	54	35	47	57	76	110	135	139	65	60	4	0
12005	7730 RIVERSIDE DR E WINDSOR	52	20	30	38	49	89	104	105	45	39	0	0
12006	BEACH LANE/HWY 18 LA SALLE	59	32	51	62	79	108	141	163	67	61	2	1
12007	WRIGHT/WATER ST WINDSOR	57	45	61	75	90	123	163	175	80	75	7	1
12008	467 UNIVERSITY AV W WINDSOR	340	35	49	63	78	113	155	189	69	62	22	1
12009	9725 RIVERSIDE DR E LITTLE RIVER	56	19	26	32	49	78	117	126	42	36	1	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	19	28	31	46	95	112	113	44	37	0	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	34	43	59	71	93	123	130	60	56	1	INS
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	34	50	77	124	193	268	279	98	79	18	1
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	49	47	63	87	96	119	208	243	87	79	5	1
12016	COLLEGE/SOUTH ST WINDSOR	57	38	52	63	81	121	162	168	71	64	6	1
12036	1802 GEORGE AV WINDSOR	55	39	43	59	72	102	121	122	63	58	1	0
12037	3225 CALIFORNIA ST WINDSOR	56	26	29	36	47	74	129	143	45	41	1	0
12038	2885 HOWARD AV WINDSOR	56	45	63	78	97	136	178	181	84	76	8	1
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	32	46	62	73	104	154	180	65	58	2	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	31	39	53	63	98	133	139	58	53	3	0
12049	643 ALEXANDRINE WINDSOR	60	33	41	53	66	103	137	141	60	54	4	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	40	54	66	77	135	192	205	76	68	7	1
12053	415 FRONT ST AMHERSTBURG	57	26	35	43	61	91	124	130	51	45	1	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	28	40	47	59	86	124	135	54	50	1	0
14001	GENERAL HOSPITAL, 220 MITTON ST SARNIA	56	17	24	31	40	71	110	117	38	33	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	16	25	34	46	71	107	116	39	34	0	0
14030	RR1 (N OF HOUSE) CORUNNA	56	18	26	32	45	82	128	130	42	35	2	0
14031	RR1 (N OF BARN) MOORETOWN	55	13	19	23	33	71	102	121	33	27	1	0

TABLE A-23 (Cont.) ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH RUN DATE JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
14054	SARNIA YACHT CLUB, POINT EDWARD SARNIA	59	18	24	31	43	80	114	125	40	34	1	0
14059	ST CLAIR BLVD/HWY 40 CORUNNA	58	15	19	27	38	57	103	104	33	29	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	23	30	38	56	80	144	208	49	42	1	0
14151	DAVID/FRONT ST SARNIA	55	23	34	42	70	119	242	300	62	49	6	0
14152	CHRISTINA/EXMOUTH ST SARNIA	116	38	49	65	92	135	373	467	83	69	19	1
14153	704 MARA ST POINT EDWARD SARNIA	115	23	33	43	60	115	149	158	56	47	9	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	60	27	40	53	80	104	157	157	64	54	4	0
15006	16 ALEXANDRIA ST ST THOMAS	37	21	39	50	75	134	225	254	70	54	8	INS
15008	EDGEWARE RD (NNW VARTA PLT) ST THOMAS	56	15	23	33	43	69	148	163	40	32	2	0
15009	LONGWOODS CONSERVATION AUTHORITY	76	12	18	24	37	71	96	98	34	27	0	0
15014	POND MILLS RD/DEVERON CRES LONDON	57	27	36	50	67	100	134	146	55	48	2	0
15015	951 COMMISSIONERS RD E LONDON	58	17	28	34	42	61	99	100	38	34	0	0
15016	801 COMMISSIONERS RD E LONDON	59	16	27	36	44	68	115	135	40	34	1	0
15017	8 MOUNTSFIELD DR LONDON	56	23	32	45	50	89	114	116	48	42	0	0
15116	801 COMMISSIONERS RD E LONDON	57	23	32	43	55	93	138	143	50	43	3	0
17006	ST ANTHONY'S SS, HWY 2 BEACHVILLE	52	33	46	63	83	167	299	420	83	67	8	1
17020	HWY 2 RR 2 (J SPRIEL PROP) INGERSOLL	54	31	46	63	89	107	255	323	75	63	5	1
17021	OXFORD CTY RD 6 (HESSTON FARM) EMBRO	69	31	53	76	100	136	220	258	82	70	11	1
22087	JARVIS COMMUNITY CENTRE,JAMES ST JARVIS	57	21	33	42	59	84	118	124	49	43	1	0
22090	ST GEORGE/ALMA PORT DOVER	48	15	29	41	56	81	115	120	46	38	0	0
22092	RAINHAM RD/SANDUSK RD JARVIS	45	19	25	34	42	59	106	120	38	33	0	0
22095	HWY 6 (SEMINGTON PROP) HAGERSVILLE	36	26	34	56	69	85	149	186	57	50	1	INS
22096	ALMA/LAIDLAW ST HAGERSVILLE	38	23	32	45	58	81	95	96	48	42	0	INS
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	47	13	20	29	38	57	97	104	33	28	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	32	44	55	81	111	199	234	68	59	5	0
22961	NANTICOKE RD/WALPOLE CON 2 NANTICOKE	51	21	32	39	50	81	148	165	48	41	3	0

TABLE A-23 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
22964	N 2 KM NANTICOKE GS NANTICOKE	57	18	26	37	43	68	97	102	39	34	0	0
22965	HWY 6/NORFOLK CON 2 JARVIS	57	16	25	38	51	66	84	87	40	35	0	0
26029	EDNA/FREDERICK STS KITCHENER	60	31	48	59	86	121	186	243	71	62	6	1
26048	MONO-MULAR SCHOOL HWY89/VIOLET HILL	52	12	23	28	41	87	108	121	39	31	1	0
27008	71 KING ST ST CATHARINES	59	24	36	49	56	84	138	145	52	46	2	0
27045	337 ALBERTA/DEVON ST WELLAND	51	32	39	47	60	82	159	171	57	51	4	0
27047	DAVIS/FRAZER PORT COLBORNE	53	24	37	47	59	85	131	138	52	46	3	0
27050	4057 VICTORIA AV NIAGARA FALLS	55	47	65	77	105	148	185	188	90	80	12	1
27051	HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	25	35	43	53	69	97	111	114	59	55	0	INS
27052	185 QUEEN ST S THOROLD	44	49	77	102	181	260	497	544	146	114	20	1
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	55	51	65	84	116	171	378	392	114	95	16	1
27056	ALLENDALE AV NIAGARA FALLS	57	25	37	44	52	78	102	116	47	43	0	0
28027	HANLON EXPWY/SPEED RIVER GUELPH	60	28	43	56	75	127	180	200	67	57	7	0
28028	EXHIBITION ST/CLARK ST GUELPH	53	17	29	40	53	76	130	144	46	39	1	0
29000	ELGIN/KELLY ST HAMILTON	333	37	53	67	88	125	203	223	76	68	42	1
29009	KENILWORTH HAMILTON	50	24	38	51	67	91	122	132	55	49	1	0
29011	BURLINGTON/LEEDS HAMILTON	57	58	78	92	125	161	232	236	106	98	18	1
29012	BURLINGTON/WELLINGTON HAMILTON	57	31	41	58	74	108	147	150	64	56	5	0
29017	CHATHAM/FRID HAMILTON	56	45	57	75	113	148	204	220	90	80	13	1
29025	BARTON/WENTWORTH HAMILTON	55	50	66	76	95	144	194	197	88	81	9	1
29067	450 HUGHSON ST N HAMILTON	58	25	38	45	60	97	122	124	53	48	1	0
29087	405 CUMBERLAND AV HAMILTON	55	31	39	55	66	92	118	135	57	52	1	0
29089	BARTON/NASH RD HAMILTON	52	35	50	66	81	110	168	173	71	63	4	1
29098	BAY/MAIN ST HAMILTON	58	19	33	47	65	92	133	138	52	44	2	0
29102	467 BEACH BLVD HAMILTON	321	39	60	80	102	142	246	286	87	77	63	1
29111	OFIELD RD/HWY 5 GREENSVILLE	56	45	75	101	141	269	587	762	141	108	21	1

TABLE A-23 (Cont.) ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH RUN DATE JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
29112	HARVEST RD/WESITE GREENSVILLE	48	15	29	40	50	100	163	173	50	39	2	0
29113	GERTRUDE/DEPEW HAMILTON	56	44	60	82	104	155	188	189	91	81	13	1
29114	VICKERS RD/EAST 18TH ST HAMILTON	47	24	40	48	63	87	98	102	53	48	0	0
29118	MAIN ST W/HWY 403 HAMILTON	52	23	32	42	52	84	127	154	48	43	1	0
29119	MORLEY ST/PARKDALE AV HAMILTON	55	52	77	89	108	171	223	225	100	92	12	1
29122	DUNDURN/YORK HAMILTON	53	23	37	46	56	76	103	108	47	43	0	0
29130	EWEN RD/WHITNEY AV HAMILTON	54	20	29	38	53	90	180	222	51	42	4	0
29135	ALBRIGHT RD/MT ALBION RD HAMILTON	54	18	28	36	45	66	90	93	39	34	0	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	320	30	42	55	71	112	245	390	67	56	27	0
31058	MOSLEY/LESLIE STS TORONTO	291	43	59	74	92	133	239	288	84	75	42	1
31065	633 EASTERN AV TORONTO	339	41	60	76	92	138	273	521	85	75	47	1
31082	WORKS DEPT, 138 HAMILTON AV TORONTO	328	38	52	66	85	120	207	243	75	66	33	1
31085	TECUMSETH/NIAGARA ST TORONTO	333	40	55	70	88	126	218	253	79	70	42	1
31104	26 BREADALBANE TORONTO	340	35	48	56	67	104	164	180	63	58	19	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	25	37	44	54	75	117	125	49	44	1	0
31181	60 BATHURST ST TORONTO	331	34	50	68	84	120	214	224	73	63	32	1
31183	FORT YORK TORONTO	337	37	52	64	84	120	186	285	73	65	33	1
32010	LEASIDE HYDRO STATION EAST YORK	101	28	41	53	64	103	154	175	60	53	5	0
33003	LAWRENCE/KENNEDY SCARBORO	114	31	41	51	63	87	117	129	55	51	1	0
34025	35 EDGAR AVE NORTH YORK WEST	29	21	43	52	64	94	110	113	55	49	0	INS
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	88	19	31	43	57	116	201	260	55	43	7	0
35033	EVANS/ARNOLD AV ETOBICOKE	113	40	56	66	78	115	166	181	71	66	10	1
35051	RESOURCES RD (MOL LAB) ETOBICOKE	343	28	43	53	68	94	148	200	59	53	12	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	21	28	41	58	109	301	350	56	44	14	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	116	23	33	42	54	81	112	122	47	42	1	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	120	23	34	44	54	82	148	173	50	44	4	0

TABLE A-23 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
45001	FIRE HALL, BAYLY/BROCK PICKERING	342	27	41	53	69	99	161	580	61	52	15	0
45007	AJAX-PICKERING HOSP AJAX	178	23	32	40	52	78	116	173	47	41	1	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	113	25	38	50	61	91	130	173	54	48	4	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	42	64	78	109	152	204	236	90	80	21	1
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	93	30	45	60	80	117	159	208	69	60	8	0
46033	FIRE HALL, BRAMALEA RD BRAMALEA	56	30	45	61	81	112	186	243	69	60	5	0
46041	2414 DIXIE RD MISSISSAUGA	330	39	52	68	86	113	175	207	74	67	28	1
46045	2365 DIXIE RD MISSISSAUGA	328	34	52	64	82	116	180	226	72	64	28	1
46046	2360 DIXIE RD MISSISSAUGA	318	31	45	56	73	114	178	223	65	58	29	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	119	30	40	53	72	95	149	195	60	54	4	0
47019	POST OFFICE, 17-25 PETER ST S ORILLIA	32	27	36	46	57	112	138	149	55	48	1	INS
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	62	20	26	33	38	59	87	87	37	34	0	0
48002	HWY47/E OF HWY48 STOUFFVILLE	112	21	29	37	47	76	95	131	42	37	1	0
48140	CON 5 (BROWN PROP) RAVENSHOE	85	14	22	35	59	103	200	647	54	37	6	0
48141	RR2 (INGHAM PROP) KESWICK	90	11	17	24	34	69	128	130	33	26	2	0
48142	RR2 (CALDERARO PROP) KESWICK	95	17	26	34	48	84	131	193	45	36	2	0
49011	HWY 117/BELLWOOD ACRES DORSET	183	4	7	10	17	35	64	71	16	11	0	0
58027	51 SHUTER ST PORT HOPE	91	14	22	29	39	78	156	178	38	30	2	0
58041	FILT PLT, MARSH ST PORT HOPE	95	13	25	36	47	90	146	207	46	36	7	0
58042	CAN TIRE, QUEEN ST PORT HOPE	93	20	27	35	48	86	130	198	45	38	2	0
61015	18 YOUNG STREET RED LAKE	48	17	26	45	58	147	207	210	60	42	7	0
61027	35 VAN HORNE AV DRYDEN	30	12	21	25	39	66	97	106	34	27	0	INS
62013	WEATHER STN ATIKOKAN	52	12	18	27	45	59	97	125	33	27	1	0
62030	PORTAGE/CHURCH ST FORT FRANCES	54	24	38	55	78	105	146	159	62	51	4	0
62032	CEMETERY,COLONIZATION RD W FORT FRANCES	58	12	19	25	36	55	83	87	31	26	0	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	22	27	36	51	65	98	102	41	37	0	0

TABLE A-23 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
63012	DAWSON CT/ALGOMA ST N THUNDER BAY	57	20	26	36	46	65	98	126	39	34	1	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	19	28	38	46	62	96	97	40	36	0	0
63046	CAN-CAR, MONTREAL ST THUNDER BAY	57	23	42	61	86	190	422	644	90	63	11	1
63052	TRNSIT MAINT BD, WILLIAM RD THUNDER BAY	56	21	32	41	61	86	126	153	50	43	1	0
63200	MTC 615 JAMES ST S THUNDER BAY	58	18	30	39	53	68	117	129	43	37	1	0
63301	SEWAGE TREATMENT PLANT THUNDER BAY	61	18	27	36	51	62	83	84	40	35	0	0
63303	THUNDER BAY TERMINALS #3 THUNDER BAY	61	25	38	52	66	89	175	311	59	50	1	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	27	47	83	139	237	344	388	108	79	96	1
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	21	26	34	46	69	92	121	39	35	1	0
71065	HOSPITAL, LAKESHORE AV BLIND RIVER	53	14	19	26	32	50	91	95	30	24	0	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	114	12	21	31	50	79	164	184	42	32	6	0
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	14	21	28	39	55	69	69	31	27	0	INS
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	17	24	34	44	75	131	145	40	33	3	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	42	17	24	34	51	79	123	129	43	35	1	0
72080	CUSTOM SAWMILL RD (LEBLANC PROP) HEARST	114	12	22	42	78	183	538	710	79	45	19	0
75010	OPP STN NORTH BAY	36	17	22	26	35	48	97	114	32	28	0	INS
77016	WATER TANK, ASH ST SUDBURY	56	13	20	25	32	52	78	94	29	25	0	0
77026	19 LISGAR ST SUDBURY	54	17	23	28	38	55	91	109	33	30	0	0
77029	POST OFFICE, SPRUCE/BARBER ST ESPANOLA	58	18	28	38	49	76	115	116	43	37	0	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	17	23	32	39	71	113	124	37	31	1	0
77214	ESPANOLA	174	17	29	40	57	100	143	224	50	41	9	0
77215	ESPANOLA	129	19	29	43	58	97	199	267	52	42	4	0

TABLE A-24 10-YEAR TREND FOR TSP

Annual Geometric Mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
ATIKOKAN	36	39	26	20	21	23	23	22	26	27
BRAMALEA	67	60	53	61	65	66	62	59	63	60
BURLINGTON	61	49	45	46	49	57	53	45	50	42
CHATHAM	70	75	65	48	45	41	43	45	51	50
COURTRIGHT	49	48	32	36	33	37	34	36	34	34
ESPANOLA	68	65	59	45	46	45	42	37	40	37
ETOBICOKE	84	83	91	74	53	59	58	61	62	43
FORT FRANCES	39	40	39	32	33	32	26	29	29	26
HAMILTON	100	88	72	81	75	81	71	76	77	81
KITCHENER	80	64	64	54	51	58	46	56	61	62
LONDON	76	83	58	51	52	55	42	50	65	54
MISSISSAUGA	70	70	73	62	60	68	55	53	56	54
NORTH BAY	34	46	37	34	33	37	25	29	28	28
NORTH YORK	52	48	44	43	38	39	40	40	40	49
OAKVILLE	47	62	50	45	40	47	43	43	45	44
ORILLIA	50	50	44	59	42	43	42	40	41	64
OSHAWA	62	58	54	47	42	44	41	43	51	48
PICKERING	44	49	50	48	41	47	49	47	44	52
PORT HOPE	53	33	34	36	30	46	45	31	31	30
S.S.MARIE	53	62	45	40	35	37	36	34	35	35
SARNIA	66	76	62	58	59	45	46	45	42	42
SCARBORO	70	70	59	57	51	60	53	55	53	51
ST CATHARINES	67	62	57	56	68	58	50	60	47	46
ST THOMAS	102	80	61	55	57	59	56	51	65	54
SUDBURY	37	42	40	34	28	28	26	29	31	25
THUNDER BAY	51	51	52	39	35	44	36	40	35	37
TORONTO	72	67	58	55	54	54	50	51	52	58
WELLAND	76	67	57	42	51	57	49	54	45	46
WINDSOR	80	77	69	62	53	50	50	61	58	60

TABLE A-25 LEAD (Pb) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
NOV 21, 1989

YEAR - 1988 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	2	4	5	7	10	19	24	6	5	0
12005	7730 RIVERSIDE DR E WINDSOR	52	1	2	3	4	7	12	13	4	3	0
12007	WRIGHT/WATER ST WINDSOR	57	1	2	4	6	8	16	17	4	3	0
12008	467 UNIVERSITY AV W WINDSOR	340	3	5	6	8	11	25	34	7	6	0
12009	9725 RIVERSIDE DR E LITTLE RIVER	56	1	1	1	2	4	7	8	2	1	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	1	2	3	4	6	9	9	3	2	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	3	4	5	7	10	17	19	6	5	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	3	4	5	8	14	24	26	7	6	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	49	2	4	6	7	9	14	14	6	5	0
12038	2885 HOWARD AV WINDSOR	57	4	8	10	11	18	23	24	10	9	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	5	7	9	13	20	26	33	11	9	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	2	3	4	6	8	11	14	5	4	0
12049	643 ALEXANDRINE WINDSOR	60	3	4	6	7	10	15	16	6	5	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	4	5	7	9	13	30	47	8	7	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	2	4	5	5	7	11	13	5	4	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	1	1	2	2	4	10	12	2	1	0
14030	RR1 (W OF HOUSE) CORUNNA	56	1	2	2	3	5	8	10	3	2	0
14031	RR1 (W OF BARN) MOORETOWN	55	1	1	1	2	3	5	5	1	1	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	1	2	4	5	9	12	14	4	3	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	3	6	7	8	13	18	18	8	7	0
15008	EDGEWARE RD (NNW VARTA PLT) ST THOMAS	56	1	2	6	11	31	55	65	11	4	0
15009	LONGWOODS CONSERVATION AUTHORITY	76	1	1	2	2	5	7	7	2	1	0
15014	POND MILLS RD/DEVERON CRES LONDON	57	2	3	4	8	13	20	21	6	5	0
15015	951 COMMISSIONERS RD E LONDON	58	1	2	3	4	6	8	8	3	3	0
15016	801 COMMISSIONERS RD E LONDON	59	1	2	2	3	5	6	7	3	2	0
15017	8 MOUNTSFIELD DR LONDON	56	2	3	4	5	10	13	13	4	3	0

TABLE A-25 (Cont.) ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH RUN DATE NOV 21, 1989

YEAR - 1988 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
15116	801 COMMISSIONERS RD E LONDON	57	1	2	3	4	6	9	10	3	2	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	2	3	4	5	8	14	18	4	3	0
26029	EDNA/FREDERICK STS KITCHENER	60	4	6	8	15	25	35	38	12	10	0
27008	71 KING ST ST CATHARINES	59	2	3	4	5	7	9	10	4	4	0
28028	EXHIBITION ST/CLARK ST GUELPH	53	1	1	1	4	7	8	9	2	1	0
29011	BURLINGTON/LEEDS HAMILTON	52	8	12	19	24	38	79	84	22	18	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	3	5	6	10	14	25	31	8	6	0
29017	CHATHAM/FRID HAMILTON	54	2	4	5	7	14	34	52	8	6	0
29025	BARTON/WENTWORTH HAMILTON	43	6	8	11	15	26	41	44	14	12	0
29067	450 HUGHSON ST N HAMILTON	54	3	4	6	9	13	18	19	7	6	0
29098	BAY/MAIN ST HAMILTON	51	2	3	5	8	13	25	29	7	5	0
29102	467 BEACH BLVD HAMILTON	63	4	7	10	14	18	28	31	11	9	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	46	2	3	3	5	7	17	17	4	4	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	321	10	10	10	20	30	60	90	10	10	0
31058	MOSLEY/LESLIE STS TORONTO	293	20	30	50	100	200	460	710	80	50	3
31065	633 EASTERN AV TORONTO	339	10	20	30	50	130	330	490	50	30	0
31082	WORKS DEPT, 138 HAMILTON AV TORONTO	327	1	7	10	15	22	32	36	11	8	0
31085	TECUMSETH/NIAGARA ST TORONTO	333	2	4	8	17	49	243	404	23	9	0
31104	26 BREADALBANE TORONTO	340	3	5	7	9	14	24	51	8	7	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	1	3	4	7	10	14	22	5	3	0
31181	60 BATHURST ST TORONTO	331	1	2	4	7	21	43	68	8	3	0
31183	FORT YORK TORONTO	337	1	1	2	4	16	48	400	6	2	0
32010	LEASIDE HYDRO STATION EAST YORK	101	1	5	7	10	15	29	36	8	5	0
33003	LAWRENCE/KENNEDY SCARBORO	116	1	5	7	10	14	21	27	8	5	0
34025	35 EDGAR AVE NORTH YORK WEST	29	1	1	2	7	15	21	23	5	2	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	88	1	2	4	6	9	16	25	5	3	0

TABLE A-25 (Cont.) ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH RUN DATE NOV 21, 1989

YEAR - 1988 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
35033	EVANS/ARNOLD AV ETOBICOKE	112	5	7	9	12	17	29	32	10	9	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	116	1	1	3	5	9	16	20	4	2	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	121	1	2	4	5	8	12	17	4	2	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	120	1	2	6	8	13	21	26	6	3	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	2	5	6	7	10	16	18	6	5	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	93	3	5	6	9	14	23	24	8	6	0
46033	FIRE HALL, BRAMALEA RD BRAMALEA	56	1	3	6	10	18	35	47	8	4	0
46041	2414 DIXIE RD MISSISSAUGA	331	48	115	189	357	687	1563	3431	313	187	64
46045	2365 DIXIE RD MISSISSAUGA	329	11	32	56	105	248	898	3331	120	52	13
46046	2360 DIXIE RD MISSISSAUGA	318	34	70	120	236	486	1203	2515	218	126	29
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	120	1	3	5	7	11	20	21	5	3	0
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	62	1	2	4	6	9	14	15	4	2	0
48002	HWY47/E OF HWY48 STOUFFVILLE	106	1	1	3	4	8	17	110	4	2	0
61015	18 YOUNG STREET RED LAKE	49	1	2	7	18	97	555	1783	57	5	1
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	3	4	5	6	11	17	17	6	5	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	2	3	4	6	8	11	13	5	4	0
63200	MTC 615 JAMES ST S THUNDER BAY	58	2	4	6	8	12	22	23	7	5	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	1	2	4	6	11	25	35	5	3	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	1	3	4	4	6	9	10	4	3	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	114	1	2	4	5	9	11	12	4	3	0
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	2	3	4	5	8	11	11	5	4	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	2	3	4	5	8	12	14	4	3	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	2	3	4	6	8	10	10	5	4	0
75010	OPP STN NORTH BAY	36	1	2	3	4	6	8	8	3	2	0
77016	WATER TANK, ASH ST SUDBURY	56	1	3	4	6	10	13	14	5	3	0
77026	19 LISGAR ST SUDBURY	54	2	4	5	7	10	19	22	6	5	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	1	2	3	5	10	24	32	5	3	0

TABLE A-26 10-YEAR TREND FOR Pb

Annual Geometric mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BRAMALEA	.3	.2	.2	.3	.3	.2	.2	.2	.1	.04
CHATHAM	.3	.3	.2	.2	.2	.2	.1	.1	.1	.04
ETOBICOKE	.2	.1	.2	.3	.3	.2	.2	.2	.1	.03
HAMILTON	.6	.5	.6	.4	.4	.4	.3	.3	.2	.12
LONDON	.5	.4	.3	.3	.3	.3	.2	.1	.1	.07
MISSISSAUGA	.4	.3	.4	.3	.3	.3	.2	.2	.1	.03
NORTH BAY	.2	.2	.2	.2	.2	.1	.1	.1	.1	.02
NORTH YORK	.6	.4	.4	.3	.3	.3	.2	.2	.1	-
OSHAWA	.4	.3	.2	.2	.2	.2	.2	.1	.1	.03
S.S. MARIE	.4	.3	.2	.1	.2	.2	.2	.1	.1	.03
SARNIA	.2	.1	.1	.1	.2	.1	.1	.1	.0	.03
SCARBORO	.4	.3	.3	.3	.3	.4	.3	.2	.1	.05
SUDBURY	.1	.1	.2	.1	.1	.1	.1	.1	.1	.03
THUNDER BAY	.2	.1	.2	.2	.2	.2	.1	.1	.1	.05
TORONTO	.4	.3	.4	.2	.3	.3	.2	.2	.1	.07
WINDSOR	.3	.3	.2	.2	.2	.2	.2	.2	.1	.05

* In 1989 lead reported to .01 ug/m3

TABLE A-27 COPPER (Cu) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - COPPER IN TOTAL SUSPENDED PARTICULATE UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	1	3	6	12	32	39	40	11	6	0
12005	7730 RIVERSIDE DR E WINDSOR	52	1	3	6	7	11	20	24	6	4	0
12008	467 UNIVERSITY AV W WINDSOR	340	2	3	5	8	14	34	44	7	5	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	1	2	3	4	6	14	19	4	3	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	2	3	4	5	9	13	14	5	4	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	1	3	6	11	18	87	151	11	5	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	1	2	3	8	15	26	32	6	3	0
12038	2885 HOWARD AV WINDSOR	57	3	7	10	30	47	56	59	20	12	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	1	2	4	12	27	43	46	10	4	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	3	5	7	12	24	71	135	13	8	0
12049	643 ALEXANDRINE WINDSOR	60	2	5	9	11	18	24	26	9	7	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	3	5	7	66	118	158	161	41	15	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	1	1	4	10	14	23	25	6	3	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	1	3	5	10	21	68	110	9	4	0
14030	RR1 (W OF HOUSE) CORUNNA	56	1	2	3	6	9	14	14	4	3	0
14031	RR1 (W OF BARN) MOORETOWN	55	1	1	2	2	4	5	6	2	1	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	6	11	19	34	66	136	151	31	20	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	60	2	5	7	11	15	26	29	9	7	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	1	2	4	10	17	24	27	7	4	0
15014	POND MILLS RD/DEVERON CRES LONDON	57	1	1	1	2	3	4	4	2	1	0
15015	951 COMMISSIONERS RD E LONDON	58	1	1	1	2	9	16	16	3	1	0
15016	801 COMMISSIONERS RD E LONDON	59	1	1	1	2	3	5	6	1	1	0
15017	8 MOUNTSFIELD DR LONDON	56	1	3	3	4	5	12	13	4	3	0
15116	801 COMMISSIONERS RD E LONDON	57	1	2	4	7	24	61	61	9	4	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	3	7	15	28	42	73	82	21	13	0
26029	EDNA/FREDERICK STS KITCHENER	60	2	4	5	8	13	17	18	7	6	0

TABLE A-27 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - COPPER IN TOTAL SUSPENDED PARTICULATE UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27008	71 KING ST ST CATHARINES	59	4	6	8	9	11	15	15	8	7	0
29011	BURLINGTON/LEEDS HAMILTON	52	6	7	9	11	15	19	20	10	9	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	5	7	8	10	15	32	44	9	8	0
29017	CHATHAM/FRID HAMILTON	54	6	8	9	11	14	17	18	10	9	0
29025	BARTON/WENTWORTH HAMILTON	43	4	6	8	11	18	24	26	9	8	0
29067	450 HUGHSON ST N HAMILTON	54	4	6	9	11	14	23	31	9	8	0
29098	BAY/MAIN ST HAMILTON	51	2	4	5	7	10	24	32	6	5	0
29102	467 BEACH BLVD HAMILTON	63	5	7	10	12	16	30	31	11	9	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	2	3	4	5	6	8	9	4	4	0
31104	26 BREADALBANE TORONTO	340	5	7	9	13	27	58	73	13	10	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	4	7	13	18	31	50	59	15	11	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	2	3	5	8	16	27	35	7	5	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	5	8	10	18	25	41	66	14	11	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	3	5	8	11	17	30	32	10	8	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	2	2	4	7	11	36	63	6	4	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	3	3	4	5	6	10	11	4	4	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	2	3	5	10	18	25	44	8	5	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	3	4	6	9	12	15	15	7	6	0
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	114	2	3	5	7	10	16	19	6	5	0
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	4	6	8	13	19	28	30	10	9	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	5	10	15	21	36	45	52	17	13	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	3	5	6	8	13	21	22	7	6	0
75010	OPP STN NORTH BAY	36	5	9	12	15	22	41	44	14	11	0
77016	WATER TANK, ASH ST SUDBURY	56	12	15	23	35	51	93	111	29	23	0
77026	19 LISGAR ST SUDBURY	54	3	5	11	19	31	46	53	14	10	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	10	14	19	31	75	117	162	29	22	0

TABLE A-28 10-YEAR TREND FOR Cu

Annual geometric mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CHATHAM	.05	.04	.10	.23	.18	.10	.11	.13	.15	.03
HAMILTON	.29	.19	.22	.23	.32	.30	.23	.15	.15	.08
LONDON	.26	.18	.30	.13	.33	.21	.16	.13	.28	.07
NORTH BAY	.38	.43	.40	.38	.22	.20	.15	.13	.18	.11
S.S.MARIE	.65	.55	.20	.13	.26	.14	.16	.14	.12	.06
SUDBURY	.33	.48	.24	.24	.39	.30	.37	.37	.33	.23
THUNDER BAY	.06	.09	.11	.08	.18	.19	.19	.07	.06	.04
TORONTO	.17	-	.10	.12	.16	.15	.12	.11	.12	.10
WINDSOR	.07	.04	.02	.05	.05	.05	.09	.25	.15	.06

TABLE A-29 IRON (Fe) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	7	9	13	18	36	62	69	17	14
12005	7730 RIVERSIDE DR E WINDSOR	52	4	5	8	13	23	35	36	11	8
12007	WRIGHT/WATER ST WINDSOR	57	12	20	29	51	73	85	85	37	30
12008	467 UNIVERSITY AV W WINDSOR	340	7	11	16	22	34	60	133	19	15
12010	SEWAGE STN, HANNING RD WINDSOR	49	3	3	7	9	19	26	26	9	6
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	10	16	25	30	41	69	78	25	21
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	10	16	25	60	144	210	216	53	31
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	49	12	16	23	34	53	71	75	28	24
12016	COLLEGE/SOUTH ST WINDSOR	56	10	15	22	31	46	63	69	26	22
12038	2885 HOWARD AV WINDSOR	57	18	31	51	85	174	245	312	73	53
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	8	12	17	20	30	60	61	18	16
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	7	11	14	19	27	50	53	17	14
12049	643 ALEXANDRINE WINDSOR	61	6	9	13	18	29	48	70	16	13
12051	604 CAPITOL/REMINGTON WINDSOR	56	7	11	15	27	49	63	65	23	17
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	3	5	6	8	12	17	17	7	6
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	2	3	4	6	11	18	26	5	4
14030	RR1 (N OF HOUSE) CORUNNA	56	1	2	3	5	13	22	25	5	3
14031	RR1 (W OF BARN) MOORETOWN	55	1	2	3	5	11	28	43	5	3
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	2	3	6	8	13	30	39	7	5
14152	CHRISTINA/EXMOUTH ST SARNIA	115	4	9	13	21	63	219	267	26	14
14153	704 MARA ST POINT EDWARD SARNIA	115	3	4	6	11	22	64	73	11	7
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	60	4	6	7	10	15	27	27	9	7
15009	LONGWOODS CONSERVATION AUTHORITY	65	1	2	3	6	11	16	18	5	3
15014	POND MILLS RD/DEVERON CRES LONDON	57	2	4	6	9	16	28	32	8	6
15015	951 COMMISSIONERS RD E LONDON	58	2	2	4	5	9	18	18	5	4
15016	801 COMMISSIONERS RD E LONDON	59	1	2	4	5	13	19	20	5	4

TABLE A-29 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
15017	8 MOUNTSFIELD DR LONDON	56	2	4	5	7	12	17	17	6	5
15116	801 COMMISSIONERS RD E LONDON	57	2	3	5	7	12	20	21	6	5
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	11	21	32	54	90	174	193	45	32
26029	EDNA/FREDERICK STS KITCHENER	60	3	6	9	14	19	34	52	11	8
27008	71 KING ST ST CATHARINES	59	3	4	7	9	15	25	31	8	7
29011	BURLINGTON/LEEDS HAMILTON	52	23	35	54	82	115	187	214	65	54
29012	BURLINGTON/WELLINGTON HAMILTON	56	5	10	13	22	41	76	80	20	15
29017	CHATHAM/FRID HAMILTON	54	9	16	22	30	47	72	74	26	22
29025	BARTON/WENTWORTH HAMILTON	43	9	15	21	51	100	151	176	41	27
29067	450 HUGHSON ST N HAMILTON	54	4	7	12	16	36	70	72	17	12
29098	BAY/MAIN ST HAMILTON	51	3	6	10	22	54	92	97	22	12
29102	467 BEACH BLVD HAMILTON	63	15	32	44	63	84	131	149	50	40
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	3	4	7	12	26	56	56	12	8
31104	26 BREADALBANE TORONTO	340	5	7	9	12	17	31	35	10	9
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	3	6	7	11	16	27	34	9	8
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	3	3	5	8	14	41	48	7	6
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	5	8	11	16	28	42	42	14	11
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	3	5	8	11	20	26	27	10	8
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	2	6	11	18	28	42	49	14	10
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	2	6	10	14	18	42	47	11	7
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	15	26	55	107	226	500	647	96	52
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	3	7	9	14	27	35	37	12	9
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	114	2	5	9	18	61	109	133	20	10
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	1	1	3	5	14	17	18	5	3
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	2	4	7	12	23	62	64	11	7
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	1	3	5	11	21	42	49	9	5

TABLE A-29 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
75010	OPP STN NORTH BAY	36	1	3	4	5	9	19	22	5	4
77016	WATER TANK, ASH ST SUDBURY	56	3	4	7	10	19	41	74	10	7
77026	19 LISGAR ST SUDBURY	54	3	6	7	11	22	47	70	11	8
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	3	5	9	15	23	59	63	13	9

TABLE A-30 10-YEAR TREND FOR (Fe)

Annual geometric mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CHATHAM	.9	1.1	.8	.6	.7	.5	.6	.5	.7	0.6
HAMILTON	2.9	2.6	2.3	2.5	2.2	2.3	1.9	2.8	2.5	2.7
LONDON	1.4	1.0	.7	.5	.6	.6	.5	.4	.8	0.7
NORTH BAY	.2	.6	.4	.5	.2	.3	.3	.1	.4	0.4
S.S.MARIE	1.5	1.9	1.2	.5	.5	.7	1.2	.5	1.1	0.9
SUDBURY	.6	.9	1.0	.7	.7	.5	.6	.5	.9	0.7
THUNDER BAY	1.6	1.3	1.0	1.0	.9	1.2	.8	1.0	1.0	1.0
TORONTO	.8	.6	.9	.7	.8	.8	.7	.6	.8	0.9
WINDSOR	1.7	1.2	1.4	1.2	1.1	1.1	1.0	1.0	1.5	1.4

TABLE A-31 MANGANESE (Mn) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

RUN DATE JUL 25, 1989

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	30	40	50	80	136	217	250	68	55	0
12005	7730 RIVERSIDE DR E WINDSOR	52	20	20	30	60	90	120	120	43	33	0
12008	467 UNIVERSITY AV W WINDSOR	340	20	40	60	80	140	248	350	72	57	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	10	10	20	30	80	138	170	32	22	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	30	54	90	112	162	292	310	97	78	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	40	60	110	312	861	1302	1350	289	141	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	50	60	95	140	180	220	220	106	92	0
12038	2885 HOWARD AV WINDSOR	57	40	68	90	150	214	279	290	113	94	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	40	50	60	80	120	140	140	69	64	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	30	40	50	70	110	144	150	60	52	0
12049	643 ALEXANDRINE WINDSOR	61	20	30	40	60	100	141	160	54	45	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	20	30	50	80	120	143	160	62	50	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	10	20	20	20	50	74	80	25	22	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	5	10	10	20	30	50	70	17	13	0
14030	RR1 (N OF HOUSE) CORUNNA	56	5	5	12	20	40	54	60	17	12	0
14031	RR1 (W OF BARN) MOORETOWN	55	5	5	10	20	30	44	50	14	11	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	5	20	30	40	83	124	130	35	24	0
14152	CHRISTINA/EXMOUTH ST SARNIA	115	20	40	60	98	486	1473	2180	167	77	0
14153	704 MARA ST POINT EDWARD SARNIA	115	10	20	30	58	197	835	1170	90	38	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	10	20	30	40	60	111	130	35	28	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	5	5	10	20	36	60	60	17	13	0
15014	POND MILLS RD/DEVERON CRES LONDON	57	10	20	30	40	70	90	90	36	30	0
15015	951 COMMISSIONERS RD E LONDON	58	10	20	20	30	50	64	70	27	23	0
15016	801 COMMISSIONERS RD E LONDON	59	10	20	20	30	40	64	70	23	19	0
15017	8 MOUNTSFIELD DR LONDON	56	10	20	30	30	60	88	100	30	24	0
15116	801 COMMISSIONERS RD E LONDON	40	14	21	28	36	50	78	80	32	27	0

TABLE A-31 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	46	70	140	182	398	1184	1450	199	126	0
26029	EDNA/FREDERICK STS KITCHENER	60	20	40	50	60	91	179	230	55	46	0
27008	71 KING ST ST CATHARINES	59	5	20	40	50	70	108	120	39	30	0
29011	BURLINGTON/LEEDS HAMILTON	52	180	303	430	540	765	1234	1260	452	377	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	50	75	100	150	235	528	550	134	101	0
29017	CHATHAM/FRID HAMILTON	54	53	90	135	171	297	408	430	151	123	0
29025	BARTON/WENTWORTH HAMILTON	43	70	100	150	310	648	2224	3830	337	188	0
29067	450 HUGHSON ST N HAMILTON	54	20	40	65	100	207	403	430	95	63	0
29098	BAY/MAIN ST HAMILTON	51	20	40	50	90	270	508	550	108	64	0
29102	467 BEACH BLVD HAMILTON	63	122	230	330	394	620	807	890	336	269	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	46	10	30	45	60	112	245	250	56	40	0
31104	26 BREADALBANE TORONTO	340	20	30	40	50	80	106	150	46	40	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	20	30	40	50	70	107	110	39	34	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	124	11	16	28	40	71	119	130	34	25	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	93	20	36	50	60	90	121	130	55	47	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	20	20	40	50	68	100	100	40	34	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	5	10	30	40	66	94	100	31	21	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	5	20	30	40	50	84	90	31	25	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	100	208	330	642	1270	1923	2650	526	348	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	20	40	50	86	190	240	240	76	58	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	114	20	39	70	130	291	540	830	118	68	0
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	9	10	20	30	60	80	80	27	20	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	20	30	50	86	142	370	400	74	52	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	10	16	20	30	51	96	100	26	20	0
75010	OPP STN NORTH BAY	36	5	10	20	20	20	60	60	18	15	0
77016	WATER TANK, ASH ST SUDBURY	56	5	7	10	20	30	40	40	15	12	0

TABLE A-31 (Cont.)

YEAR - 1988 ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH RUN DATE
POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77026	19 LISGAR ST SUDBURY	54	5	10	20	30	40	54	60	21	17	0

TABLE A-32 NICKEL (Ni) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

RUN DATE
JUL 25, 1989

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	10	20	144	240	15	8	0
12005	7730 RIVERSIDE DR E WINDSOR	52	5	5	5	5	5	10	10	5	5	0
12008	467 UNIVERSITY AV W WINDSOR	340	5	5	5	10	20	56	160	9	7	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	5	5	5	5	5	14	20	6	5	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	5	5	5	5	11	20	20	7	7	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	5	5	7	10	20	34	40	10	8	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	5	5	5	6	10	14	20	7	6	0
12038	2885 HOWARD AV WINDSOR	57	5	5	10	10	20	39	90	11	9	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	5	5	5	8	10	38	90	8	6	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	5	5	5	10	10	43	110	9	7	0
12049	643 ALEXANDRINE WINDSOR	61	5	5	5	5	10	13	20	6	6	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	5	5	5	5	10	14	20	6	6	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	5	5	5	5	5	13	20	6	5	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	5	5	5	5	11	70	110	9	7	0
14030	RR1 (W OF HOUSE) CORUNNA	56	5	5	5	5	10	10	10	6	5	0
14031	RR1 (W OF BARN) MOORETOWN	55	5	5	5	5	5	10	10	5	5	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	5	5	5	5	20	84	130	12	8	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	60	5	5	5	5	10	10	10	6	5	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	5	5	5	5	5	10	10	5	5	0
15014	POND MILLS RD/DEVERON CRES LONDON	57	5	5	5	5	10	20	20	6	6	0
15015	951 COMMISSIONERS RD E LONDON	58	5	5	5	10	12	34	40	8	7	0
15016	801 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	29	50	7	6	0
15017	8 MOUNTSFIELD DR LONDON	56	5	5	5	5	10	14	20	6	6	0
15116	801 COMMISSIONERS RD E LONDON	58	1	2	7	11	23	50	66	10	5	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	5	5	5	10	10	20	20	7	6	0
26029	EDNA/FREDERICK STS KITCHENER	60	5	5	5	5	10	13	20	6	6	0

TABLE A-32 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

RUN DATE
JUL 25, 1989

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27008	71 KING ST ST CATHARINES	59	5	5	5	5	10	32	60	7	6	0
27047	DAVIS/FRAZER PORT COLBORNE	53	20	30	60	98	1132	2091	2230	290	78	1
29011	BURLINGTON/LEEDS HAMILTON	52	5	5	5	10	10	24	30	8	7	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	5	5	5	5	10	14	20	6	6	0
29017	CHATHAM/FRID HAMILTON	54	5	5	5	10	16	24	30	8	7	0
29025	BARTON/WENTWORTH HAMILTON	43	5	5	5	10	17	25	30	8	7	0
29067	450 HUGHSON ST N HAMILTON	54	5	5	5	5	10	17	30	6	6	0
29098	BAY/MAIN ST HAMILTON	51	5	5	5	5	10	20	20	7	6	0
29102	467 BEACH BLVD HAMILTON	63	5	5	10	10	10	20	20	8	7	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	46	5	5	5	5	10	24	50	7	6	0
31104	26 BREADALBANE TORONTO	340	5	5	5	5	5	10	60	6	5	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	5	5	5	5	10	10	10	6	5	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	1	3	7	13	22	37	52	10	5	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	93	5	5	5	5	10	30	30	8	6	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	5	5	5	5	9	12	30	6	5	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	5	5	5	5	5	5	5	5	5	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	5	5	5	5	5	10	10	5	5	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	5	5	5	5	10	30	100	7	6	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	5	5	5	5	10	23	70	7	6	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	114	5	5	5	5	10	67	130	8	6	0
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	5	5	5	5	6	10	10	6	5	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	5	5	5	5	10	55	100	7	6	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	5	5	5	5	10	10	10	6	6	0
75010	OPP STN NORTH BAY	36	5	5	5	5	14	88	120	11	7	0
77016	WATER TANK, ASH ST SUDBURY	56	20	30	100	175	649	1522	1730	225	89	0
77026	19 LISGAR ST SUDBURY	54	10	30	80	161	377	743	910	141	70	0

TABLE A-32 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	60	90	160	312	763	4761	6140	431	193	2

TABLE A-33 CHROMIUM (Cr) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - CHROMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	5	10	24	60	7	6	0
12005	7730 RIVERSIDE DR E WINDSOR	52	5	5	5	5	5	10	10	5	5	0
12008	467 UNIVERSITY AV W WINDSOR	340	5	5	5	10	10	36	70	8	7	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	5	5	5	5	11	30	30	8	6	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	5	5	5	10	20	27	30	10	8	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	5	5	5	10	40	65	70	15	10	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	5	5	5	10	10	25	30	8	7	0
12038	2885 HOWARD AV WINDSOR	57	5	5	10	20	30	51	70	16	12	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	5	5	5	5	10	16	30	6	6	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	5	5	5	5	10	19	40	6	6	0
12049	643 ALEXANDRINE WINDSOR	60	5	5	5	5	5	10	10	5	5	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	5	5	5	5	10	24	30	7	6	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	5	5	5	5	10	10	10	6	5	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	5	5	5	5	10	10	26	6	6	0
14030	RR1 (W OF HOUSE) CORUNNA	56	5	5	5	10	10	58	90	9	7	0
14031	RR1 (W OF BARN) MOORETOWN	55	5	5	5	5	10	20	20	6	6	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	5	5	5	5	6	44	50	8	6	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	5	5	5	5	10	30	30	8	7	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	5	5	5	5	8	30	30	7	6	0
15014	POND MILLS RD/DEVERON CRES LONDON	53	5	5	5	5	5	10	10	5	5	0
15015	951 COMMISSIONERS RD E LONDON	53	5	5	5	5	10	10	10	6	6	0
15016	801 COMMISSIONERS RD E LONDON	54	5	5	5	5	10	10	10	6	6	0
15017	8 MOUNTSFIELD DR LONDON	51	5	5	5	5	10	10	10	6	6	0
15116	801 COMMISSIONERS RD E LONDON	57	1	2	6	8	14	20	20	7	4	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	5	5	5	5	10	30	30	7	6	0
26029	EDNA/FREDERICK STS KITCHENER	60	5	5	5	6	10	13	20	7	6	0

TABLE A-33 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - CHROMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27008	71 KING ST ST CATHARINES	59	5	5	5	5	5	13	20	5	5	0
29011	BURLINGTON/LEEDS HAMILTON	52	5	10	20	37	60	101	130	29	19	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	5	5	5	5	10	20	20	7	6	0
29017	CHATHAM/FRID HAMILTON	54	5	5	5	10	20	30	30	9	8	0
29025	BARTON/WENTWORTH HAMILTON	43	5	5	10	20	38	91	110	19	13	0
29067	450 HUGHSON ST N HAMILTON	54	5	5	5	5	10	20	20	7	6	0
29098	BAY/MAIN ST HAMILTON	51	5	5	5	5	10	20	20	7	6	0
29102	467 BEACH BLVD HAMILTON	63	5	10	10	20	20	39	60	14	12	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	5	5	5	5	10	35	40	8	6	0
31104	26 BREADALBANE TORONTO	340	5	5	5	10	20	60	80	10	7	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	5	5	5	10	10	20	30	7	7	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	1	4	7	11	21	40	47	9	5	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	5	5	5	10	10	40	40	8	7	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	5	5	5	10	28	42	50	11	8	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	5	5	5	5	5	5	5	5	5	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	5	5	5	5	7	10	10	6	5	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	105	5	5	10	10	20	30	30	11	9	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	21	5	5	5	5	5	10	10	5	5	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	39	5	5	5	5	10	59	90	9	6	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	36	5	5	5	5	10	200	690	26	7	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	17	5	5	5	5	10	18	20	7	6	0
75010	OPP STN NORTH BAY	36	5	5	5	5	5	16	20	6	5	0
77016	WATER TANK, ASH ST SUDBURY	53	5	5	5	5	10	24	30	7	6	0
77026	19 LISGAR ST SUDBURY	51	5	5	5	5	20	30	30	8	6	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	56	5	5	5	5	10	30	30	8	6	0

TABLE A-34 CADMIUM (Cd) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - CADMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	1	1	1	2	6	13	17	2	1	0
12005	7730 RIVERSIDE DR E WINDSOR	52	1	1	1	2	3	6	7	1	1	0
12008	467 UNIVERSITY AV W WINDSOR	340	1	1	2	3	6	14	15	3	2	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	1	1	1	2	3	5	7	1	1	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	1	1	2	3	4	8	9	2	1	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	1	1	2	3	5	10	11	2	1	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	1	1	1	2	6	12	14	2	1	0
12038	2885 HOWARD AV WINDSOR	57	1	1	2	2	5	7	8	2	1	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	1	1	1	2	4	6	6	2	1	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	1	1	1	1	4	10	12	1	1	0
12049	643 ALEXANDRINE WINDSOR	60	1	1	1	2	3	6	6	1	1	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	1	1	1	2	3	6	7	1	1	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	1	1	1	1	1	1	2	0	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	1	1	1	1	1	2	2	0	0	0
14030	RR1 (W OF HOUSE) CORUNNA	56	1	1	1	1	1	7	28	1	0	0
14031	RR1 (W OF BARN) MOORETOWN	55	1	1	1	1	2	3	3	0	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	1	1	1	1	2	4	5	1	0	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	1	1	1	1	3	4	5	1	0	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	1	1	1	1	2	3	3	0	0	0
15014	POND MILLS RD/DEVERON CRES LONDON	53	1	1	1	1	2	2	2	0	0	0
15015	951 COMMISSIONERS RD E LONDON	53	1	1	1	1	1	2	2	0	0	0
15016	801 COMMISSIONERS RD E LONDON	54	1	1	1	1	1	1	2	0	0	0
15017	8 MOUNTSFIELD DR LONDON	51	1	1	1	1	1	1	2	0	0	0
15116	801 COMMISSIONERS RD E LONDON	57	1	25	25	25	50	104	110	26	12	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	1	1	1	2	3	5	6	1	1	0
26029	EDNA/FREDERICK STS KITCHENER	60	1	1	1	1	1	2	2	0	0	0

TABLE A-34 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - CADMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27008	71 KING ST ST CATHARINES	59	1	1	1	1	1	3	4	0	0	0
29011	BURLINGTON/LEEDS HAMILTON	52	1	2	3	4	8	15	17	4	2	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	1	1	1	1	3	13	23	2	1	0
29017	CHATHAM/FRID HAMILTON	54	1	1	1	1	2	3	4	1	0	0
29025	BARTON/WENTWORTH HAMILTON	43	1	1	1	1	3	4	4	1	1	0
29067	450 HUGHSON ST N HAMILTON	54	1	1	1	1	3	4	5	1	1	0
29098	BAY/MAIN ST HAMILTON	51	1	1	1	1	2	5	8	1	0	0
29102	467 BEACH BLVD HAMILTON	63	1	1	1	1	3	5	6	1	1	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	1	1	1	1	1	3	4	0	0	0
31104	26 BREADALBANE TORONTO	340	1	1	1	2	3	8	12	1	1	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	1	1	1	2	3	14	22	2	1	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	1	25	25	25	80	141	160	31	12	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	1	1	1	2	2	4	4	1	1	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	1	1	1	1	2	4	5	1	0	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	1	1	1	1	1	1	1	0	0	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	1	1	1	1	1	1	1	0	0	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	105	1	1	1	1	1	1	1	0	0	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	21	1	1	1	1	1	2	2	0	0	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	39	1	1	1	1	1	2	2	0	0	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	36	1	1	1	1	1	1	1	0	0	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	17	1	1	1	1	1	1	1	0	0	0
75010	OPP STN NORTH BAY	36	1	1	1	1	1	2	2	0	0	0
77016	WATER TANK, ASH ST SUDBURY	53	1	1	1	2	4	11	16	2	1	0
77026	19 LISGAR ST SUDBURY	51	1	1	1	2	3	7	8	1	1	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	56	1	1	1	1	4	17	18	2	0	0

TABLE A-35 VANADIUM (V) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - VANADIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	10	20	30	30	10	8	0
12005	7730 RIVERSIDE DR E WINDSOR	52	5	5	5	10	20	30	30	9	8	0
12008	467 UNIVERSITY AV W WINDSOR	340	5	5	5	10	20	46	70	10	8	0
12010	SEWAGE STN, HANNING RD WINDSOR	49	5	5	5	5	20	25	30	8	7	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	29	5	5	5	10	20	27	30	10	8	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	5	5	5	10	20	34	40	10	8	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	5	5	5	10	20	30	30	9	7	0
12038	2885 HOWARD AV WINDSOR	57	5	5	5	6	10	24	30	7	7	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	5	5	5	5	20	20	20	8	7	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	5	5	5	10	20	30	30	9	7	0
12049	643 ALEXANDRINE WINDSOR	60	5	5	5	10	10	20	20	7	7	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	5	5	5	10	20	24	30	9	8	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	5	5	5	5	10	30	30	7	6	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	5	5	5	10	41	224	330	20	10	0
14030	RR1 (W OF HOUSE) CORUNNA	56	5	5	10	20	30	54	60	13	10	0
14031	RR1 (W OF BARN) MOORETOWN	55	5	5	5	10	20	38	50	11	8	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	5	5	10	20	53	255	330	29	13	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	5	5	5	10	21	40	40	10	8	0
15009	LONGWOODS CONSERVATION AUTHORITY	65	5	5	5	10	20	26	40	8	7	0
15014	POND MILLS RD/DEVERON CRES LONDON	53	5	5	5	10	20	30	30	10	8	0
15015	951 COMMISSIONERS RD E LONDON	53	5	5	10	10	20	34	40	10	8	0
15016	801 COMMISSIONERS RD E LONDON	54	5	5	10	10	20	40	40	11	9	0
15017	8 MOUNTSFIELD DR LONDON	51	5	5	10	10	20	40	40	11	9	0
15116	801 COMMISSIONERS RD E LONDON	57	1	2	2	6	10	21	22	5	3	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	57	5	5	10	20	20	34	40	12	9	0
26029	EDNA/FREDERICK STS KITCHENER	60	5	5	5	10	20	24	30	9	7	0

TABLE A-35 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1988 POLLUTANT - VANADIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

RUN DATE
JUL 25, 1989

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27008	71 KING ST ST CATHARINES	59	5	5	5	5	11	24	30	7	6	0
29011	BURLINGTON/LEEDS HAMILTON	52	5	5	5	10	20	40	40	10	8	0
29012	BURLINGTON/WELLINGTON HAMILTON	56	5	5	5	7	14	30	30	8	7	0
29017	CHATHAM/FRID HAMILTON	54	5	5	5	5	20	24	30	8	7	0
29025	BARTON/WENTWORTH HAMILTON	43	5	5	10	24	38	40	40	16	12	0
29067	450 HUGHSON ST N HAMILTON	54	5	5	5	10	16	34	40	8	7	0
29098	BAY/MAIN ST HAMILTON	51	5	5	5	10	20	24	30	9	8	0
29102	467 BEACH BLVD HAMILTON	63	5	10	10	20	30	44	50	15	12	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	5	5	5	10	20	30	30	9	7	0
31104	26 BREADALBANE TORONTO	340	5	5	5	5	10	20	30	7	6	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	5	5	5	10	10	29	30	8	7	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	192	1	2	2	7	12	29	34	5	3	0
45080	FINLEY RD, ANIMAL HOSPITAL AJAX	92	5	5	5	10	10	20	20	8	7	0
45081	65 HARWOOD AVE, AJAX WORKS DEPT AJAX	83	5	5	5	5	10	20	20	7	6	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	5	5	5	20	20	40	40	12	9	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	5	5	5	10	30	44	50	12	9	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	105	5	10	20	20	30	60	60	17	13	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	21	5	10	10	10	20	28	30	12	10	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	39	5	5	5	5	20	20	20	7	6	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	36	5	5	5	5	10	16	20	7	6	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	17	5	9	20	20	24	30	30	15	12	0
75010	OPP STN NORTH BAY	36	5	5	5	5	7	10	10	6	5	0
77016	WATER TANK, ASH ST SUDBURY	53	5	5	5	5	10	34	40	8	6	0
77026	19 LISGAR ST SUDBURY	51	5	5	5	10	20	30	30	9	7	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	56	5	5	5	5	10	24	30	7	6	0

TABLE A-36 MAXIMUM MONITORED LEVELS FOR TRACE METALS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25,1989

YEAR - 1988

POLLUTANTS - CHROMIUM IN TSP UNIT - .001 UG/M3
IRON IN TSP UNIT .1 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3
COPPER IN TSP UNIT - .01 UG/M3
NICKEL IN TSP UNIT - .001 UG/M3
VANADIUM IN TSP UNIT - .001 UG/M3
MANGANESE IN TSP UNIT - .001 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	CU MAX	FE MAX	NI MAX	CD MAX	MN MAX
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	60	30	40	69	240	17	250
12005	7730 RIVERSIDE DR E WINDSOR	52	10	30	24	36	10	7	120
12007	WRIGHT/WATER ST WINDSOR	57	N/A	N/A	N/A	85	N/A	N/A	N/A
12008	467 UNIVERSITY AV W WINDSOR	340	70	70	44	133	160	15	350
12010	SEWAGE STN, HANNING RD WINDSOR	49	30	30	19	26	20	7	170
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	54	70	40	151	216	40	11	1350
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	30	30	32	[illegible]	20	14	220
12016	COLLEGE/SOUTH ST WINDSOR	56	N/A	N/A	N/A	69	N/A	N/A	N/A
12038	2885 HOWARD AV WINDSOR	57	70	30	59	312	90	8	290
12039	DOUGLAS ST/E.C ROW W WINDSOR	59	30	20	46	61	90	6	140
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	40	30	135	53	110	12	150
12049	643 ALEXANDRINE WINDSOR	60	10	20	26	70	20	6	160
12051	604 CAPITOL/REMINGTON WINDSOR	56	30	30	161	65	20	7	160
13003	POST OFFICE, 10 CENTRE ST CHATHAM	58	10	30	25	17	20	2	80
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	26	330	110	26	110	2	70
14030	RR1 (W OF HOUSE) CORUNNA	56	90	60	14	25	10	28	60
14031	RR1 (W OF BARN) MOORETOWN	55	20	50	6	43	10	3	50
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	50	330	151	39	130	5	130
14152	CHRISTINA/EXMOUTH ST SARNIA	115	N/A	N/A	N/A	267	N/A	N/A	2180
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	30	40	29	27	10	5	130
15009	LONGWOODS CONSERVATION AUTHORITY	65	30	40	27	18	10	3	60
15014	POND MILLS RD/DEVERON CRES LONDON	57	10	30	4	32	20	2	90
15015	951 COMMISSIONERS RD. E LONDON	58	10	40	16	18	40	2	70
15016	801 COMMISSIONERS RD. E LONDON	59	10	40	6	20	29	2	70

TABLE A-36 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25,1989

YEAR - 1988 POLLUTANTS - CHROMIUM IN TSP UNIT - .001 UG/M3 NICKEL IN TSP UNIT - .001 UG/M3
IRON IN TSP UNIT - .1 UG/M3 VANADIUM IN TSP UNIT - .001 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3 MANGANESE IN TSP UNIT - .001 UG/M3
COPPER IN TSP UNIT - .01 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	CU MAX	FE MAX	NI MAX	CD MAX	MN MAX
15017	8 MOUNTSFIELD DR. LONDON	56	10	40	13	17	20	2	100
26029	EDNA/FREDERICK STS KITCHENER	60	20	30	18	52	20	2	230
27047	DAVIS/FRAZER PORT COLBORNE	53	N/A	N/A	N/A	N/A	2230	N/A	N/A
29011	BURLINGTON/LEEDS HAMILTON	52	130	40	20	214	30	17	1260
29012	BURLINGTON/WELLINGTON HAMILTON	56	20	30	44	80	20	23	550
29017	CHATHAM/FRID HAMILTON	54	30	30	18	74	30	4	430
29025	BARTON/WENTWORTH HAMILTON	43	110	40	26	176	30	4	3830
29067	450 HUGHSON ST N HAMILTON	54	20	40	31	72	30	5	430
29102	467 BEACH BLVD HAMILTON	63	60	50	31	149	20	6	890
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	40	30	9	56	50	4	250
31104	26 BREADALBANE TORONTO	340	80	30	73	35	60	12	150
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	111	30	30	59	34	10	22	110
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	5	40	63	49	5	1	100
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	10	50	11	47	10	1	90
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	30	60	44	647	100	1	2650
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	10	30	15	37	70	2	240
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	114	90	20	19	133	130	2	830
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	N/A	N/A	30	18	10	N/A	80
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	690	20	52	64	100	1	400
72077	MINISTRY OF HEALTH BLDG TIMMINS	40	20	30	22	49	10	1	100
75010	OPP STN NORTH BAY	36	20	10	44	22	120	2	60
77016	WATER TANK, ASH ST SUDBURY	56	30	40	111	74	1730	16	40
77026	19 LISGAR ST SUDBURY	54	30	30	53	70	910	8	60

TABLE A-36 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25,1989

YEAR - 1988 POLLUTANTS - CHROMIUM IN TSP UNIT - .M01 UG/M3
IRON IN TSP UNIT - .1 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3
COPPER IN TSP UNIT - .01 UG/M3
NICKEL IN TSP UNIT - .001 UG/M3
VANADIUM IN TSP UNIT - .001 UG/M3
MANGANESE IN TSP UNIT - .001 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	CU MAX	FE MAX	NI MAX	CD MAX	MN MAX
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	30	30	162	63	6140	18	N/A

TABLE A-37 NITRATE (NO_3) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	12	29	47	65	108	148	151	54	41
12005	7730 RIVERSIDE DR E WINDSOR	20	14	23	38	55	102	106	106	45	36
12008	467 UNIVERSITY AV W WINDSOR	340	15	27	42	62	91	152	181	50	40
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	12	24	48	67	101	130	141	51	38
12038	2885 HOWARD AV WINDSOR	57	10	15	19	34	70	101	107	30	23
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	12	21	34	54	108	140	142	45	33
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	10	16	27	48	72	109	112	36	27
12049	643 ALEXANDRINE WINDSOR	61	11	16	29	44	72	113	119	37	27
12051	604 CAPITOL/REMINGTON WINDSOR	56	11	19	38	56	84	101	103	43	33
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	4	11	21	42	66	98	147	30	19
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	6	9	16	22	53	92	117	22	16
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	7	11	26	46	81	125	159	35	23
15014	POND MILLS RD/DEVERON CRES LONDON	57	8	10	15	28	49	106	118	24	17
15015	951 COMMISSIONERS RD E LONDON	58	6	8	13	24	50	96	107	22	15
15016	801 COMMISSIONERS RD E LONDON	59	5	8	13	25	37	75	79	20	13
15017	8 MOUNTSFIELD DR LONDON	56	6	9	15	26	47	81	99	21	15
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	46	4	8	13	22	42	113	128	22	13
26029	EDNA/FREDERICK STS KITCHENER	60	7	11	15	29	49	91	111	25	18
27008	71 KING ST ST CATHARINES	59	16	23	36	51	79	103	106	42	35
27056	ALLENDALE AV NIAGARA FALLS	52	5	8	12	19	54	84	95	20	14
28028	EXHIBITION ST/CLARK ST GUELPH	53	9	17	34	52	69	97	101	38	29
29011	BURLINGTON/LEEDS HAMILTON	52	10	14	20	36	58	107	112	30	23
29012	BURLINGTON/WELLINGTON HAMILTON	56	8	10	19	35	65	116	129	30	20
29017	CHATHAM/FRID HAMILTON	54	8	11	17	33	59	92	93	27	20
29025	BARTON/WENTWORTH HAMILTON	43	15	29	37	60	88	102	103	46	37
29087	405 CUMBERLAND AV HAMILTON	55	5	8	13	26	52	89	108	22	15

TABLE A-37 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
29098	BAY/MAIN ST HAMILTON	51	7	9	15	29	55	105	112	26	17
29102	467 BEACH BLVD HAMILTON	63	11	18	35	49	77	101	103	38	30
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	14	26	41	60	90	116	123	47	38
31104	26 BREADALBANE TORONTO	340	12	21	31	44	80	130	164	40	31
32010	LEASIDE HYDRO STATION EAST YORK	91	6	12	18	27	47	78	79	23	18
33003	LAWRENCE/KENNEDY SCARBORO	114	7	12	19	31	55	88	108	26	19
34025	35 EDGAR AVE NORTH YORK WEST	29	8	20	38	51	78	91	91	38	29
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	88	10	21	35	53	76	110	121	41	31
35033	EVANS/ARNOLD AV ETOBICOKE	112	13	27	42	59	97	119	146	49	38
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	116	9	16	27	38	74	102	111	34	25
44015	BRONTE RD/NOBURN CRES OAKVILLE	121	7	14	22	35	58	101	112	28	21
45025	PS, RITSON RD/OLIVE AV OSHAWA	113	6	13	22	41	62	109	122	31	21
46033	FIRE HALL, BRAMALEA RD BRAMALEA	51	14	30	42	63	94	146	172	51	40
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	119	6	10	17	29	59	99	116	25	18
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	61	9	18	26	40	78	99	100	34	27
48002	HWY47/E OF HWY48 STOUFFVILLE	102	6	12	24	39	63	103	106	31	21
58027	51 SHUTER ST PORT HOPE	91	8	14	24	50	79	127	128	37	25
58041	FILT PLT, MARSH ST PORT HOPE	95	7	15	27	52	82	114	122	37	26
58042	CAN TIRE, QUEEN ST PORT HOPE	93	7	13	21	41	77	113	115	34	24
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	4	8	12	15	30	65	67	15	11
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	4	8	10	17	26	52	77	14	11
63200	MTC 615 JAMES ST S THUNDER BAY	58	4	9	12	18	30	79	86	16	12
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	3	6	10	20	39	124	175	18	11
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	6	8	13	19	49	98	175	20	14
71068	MH. MERRIFIELD SCHOOL SAULT STE MARIE	114	4	6	9	15	37	70	98	15	10
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	6	8	12	17	38	67	73	18	13

TABLE A-37 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	4	6	10	18	35	77	104	16	11
72077	MINISTRY OF HEALTH BLDG TIMMINS	42	5	7	9	14	21	36	37	12	10
75010	OPP STN NORTH BAY	36	5	8	10	17	46	57	61	18	13
77016	WATER TANK, ASH ST SUDBURY	56	2	5	7	14	28	44	49	12	8
77026	19 LISGAR ST SUDBURY	54	3	5	7	12	22	69	72	12	8
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	5	6	10	18	30	92	112	16	11

TABLE A-38 10-YEAR TREND FOR NO_3

Annual geometric mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BRAMALEA	3.8	2.9	3.0	4.3	3.8	3.8	3.6	3.7	3.3	4.0
ETOBICOKE	4.1	4.6	4.9	4.9	3.3	3.7	3.0	3.8	2.8	3.1
HAMILTON	4.0	3.8	3.4	3.7	3.7	3.8	3.5	3.8	3.9	3.7
KITCHENER	4.1	3.7	3.4	3.7	3.1	3.3	2.8	3.3	3.2	1.8
LONDON	4.9	4.5	3.5	3.6	3.3	3.6	3.3	3.6	3.9	2.3
MISSISSAUGA	3.6	3.1	3.5	4.0	4.1	3.8	3.5	3.0	2.9	1.8
NORTH BAY	2.0	1.4	1.2	1.2	1.2	1.1	1.0	.9	.9	1.3
NORTH YORK	4.4	3.3	3.1	3.2	3.1	3.3	3.1	2.7	2.8	2.9
OSHAWA	4.3	3.2	3.3	3.2	3.0	3.5	2.9	3.0	3.2	2.1
PORT HOPE	4.5	2.7	2.5	4.2	2.3	4.3	3.0	1.7	2.8	2.5
S.S.MARIE	1.2	1.4	1.5	1.2	1.3	1.2	1.0	.9	.9	1.4
SCARBORO	3.6	3.4	3.0	3.3	3.2	3.6	3.2	3.1	2.8	1.9
SUDBURY	1.0	1.2	1.6	1.1	1.3	.9	.8	.6	1.0	0.8
THUNDER BAY	.7	1.2	1.5	1.2	.7	.9	.8	.9	1.0	1.1
TORONTO	4.2	3.7	3.7	3.8	3.6	3.5	3.5	3.4	3.3	3.1
WINDSOR	5.7	5.5	5.8	4.4	4.1	3.5	3.9	2.9	4.4	4.1

TABLE A-39 SULPHATE (SO_4^{2-}) STATISTICS (1988)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	51	86	109	135	191	269	271	117	104
12005	7730 RIVERSIDE DR E WINDSOR	20	65	98	105	119	140	158	161	105	97
12008	467 UNIVERSITY AV W WINDSOR	340	48	80	97	117	171	338	435	108	95
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	50	36	80	104	126	195	280	326	109	92
12038	2885 HOWARD AV WINDSOR	57	25	42	59	85	110	218	265	70	58
12039	DOUGLAS ST/E.C. ROW W WINDSOR	59	31	63	94	123	164	296	320	100	82
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	56	23	45	85	116	147	278	294	91	72
12049	643 ALEXANDRINE WINDSOR	60	30	47	86	112	154	275	311	91	73
12051	604 CAPITOL/REMINGTON WINDSOR	56	41	72	99	124	167	318	331	105	90
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	350	36	58	71	89	136	259	401	81	70
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	58	23	37	56	80	133	249	313	69	54
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	60	20	41	83	101	131	270	274	80	59
15014	POND MILLS RD/DEVERON CRES LONDON	57	22	44	59	81	128	281	289	71	57
15015	951 COMMISSIONERS RD E LONDON	58	22	41	51	69	104	263	302	64	50
15016	801 COMMISSIONERS RD E LONDON	59	20	33	46	67	93	249	261	58	46
15017	8 MOUNTSFIELD DR LONDON	56	18	34	52	77	112	190	256	61	48
22904	HALPOLE S PS, SANDUSK RD NANTICOKE	46	22	46	73	96	153	258	263	82	64
26029	EDNA/FREDERICK STS KITCHENER	60	24	37	68	85	120	232	257	71	58
27008	71 KING ST ST CATHARINES	59	66	79	93	104	174	314	315	106	97
27056	ALLENDALE AV NIAGARA FALLS	52	21	34	46	89	146	208	309	73	55
28028	EXHIBITION ST/CLARK ST GUELPH	53	42	62	78	104	144	247	277	92	81
29011	BURLINGTON/LEEDS HAMILTON	52	37	49	96	120	167	319	382	103	84
29012	BURLINGTON/WELLINGTON HAMILTON	56	26	40	75	102	146	267	275	83	67
29017	CHATHAM/FRID HAMILTON	54	26	42	64	96	138	284	299	83	65
29025	BARTON/WENTWORTH HAMILTON	43	73	82	92	133	196	351	357	122	109
29067	405 CUMBERLAND AV HAMILTON	55	25	40	78	113	167	248	276	89	69

TABLE A-39 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
29098	BAY/MAIN ST HAMILTON	51	24	36	80	109	169	305	311	91	68
29102	467 BEACH BLVD HAMILTON	63	57	87	108	130	192	339	342	121	107
29114	VICKERS RD/EAST 18TH ST HAMILTON	44	83	98	107	121	151	308	314	121	113
31104	26 BREADALBANE TORONTO	340	41	57	70	83	142	317	385	83	72
32010	LEASIDE HYDRO STATION EAST YORK	91	24	43	60	82	130	281	290	71	57
33003	LAWRENCE/KENNEDY SCARBORO	114	25	46	61	76	107	201	362	67	56
34025	35 EDGAR AVE NORTH YORK WEST	29	46	61	74	80	113	182	192	78	73
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	88	33	70	91	111	178	313	426	99	84
35033	EVANS/ARNOLD AV ETOBICOKE	112	66	80	93	116	154	290	317	107	99
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	116	31	65	83	99	130	301	413	86	73
44015	BRONTE RD/WOBURN CRES OAKVILLE	121	28	53	74	93	128	254	356	79	67
45025	PS, RITSON RD/OLIVE AV OSHAWA	113	23	54	80	111	149	308	509	90	69
46033	FIRE HALL, BRAMALEA RD BRAMALEA	51	52	72	98	130	202	325	412	113	97
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	119	23	50	69	89	116	242	272	73	61
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	61	54	79	86	102	125	193	213	93	87
48002	HWY47/E OF HWY48 STOUFFVILLE	102	26	44	79	100	133	246	332	80	65
58027	51 SHUTER ST PORT HOPE	91	33	46	71	105	135	257	270	84	70
58041	FILT PLT, MARSH ST PORT HOPE	95	29	49	78	120	202	283	323	97	76
58042	CAN TIRE, QUEEN ST PORT HOPE	93	29	51	76	125	192	302	307	96	74
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	55	20	25	32	42	53	77	93	35	32
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	56	23	30	39	48	62	100	114	41	37
63200	MTC 615 JAMES ST S THUNDER BAY	58	23	34	43	58	75	98	125	47	42
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	267	21	48	72	107	181	309	403	91	66
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	59	46	65	76	93	129	315	348	91	80
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	114	16	31	52	70	115	217	230	60	47
71071	BOUNDRY RD/BENNET SAULT STE MARIE	29	36	45	54	62	80	94	95	55	52

TABLE A-39 (Cont.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

RUN DATE
JUL 25, 1989

YEAR - 1988 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

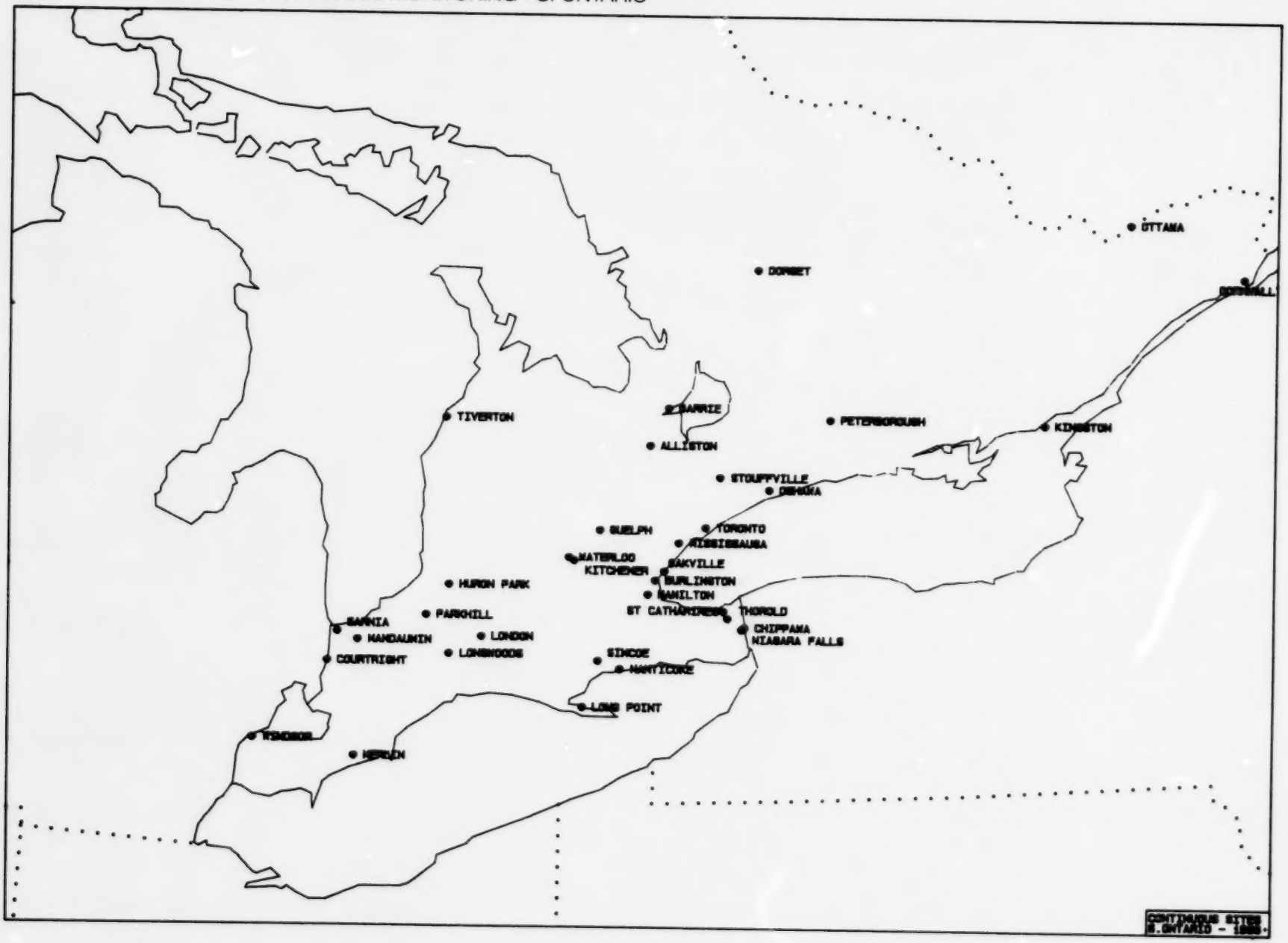
STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
71072	FIRST AV/SECOND LINE SAULT STE MARIE	109	20	32	51	70	125	208	354	60	47
72077	MINISTRY OF HEALTH BLDG TIMMINS	42	18	38	51	61	90	138	139	54	45
75010	OPP STN NORTH BAY	36	39	55	73	112	203	350	366	104	83
77016	WATER TANK, ASH ST SUDBURY	56	22	39	84	104	135	194	209	79	63
77026	19 LISGAR ST SUDBURY	54	19	32	62	97	115	183	197	68	53
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	59	39	77	97	110	149	318	437	103	88

TABLE A-40 10-YEAR TREND FOR SO_4^{2-}

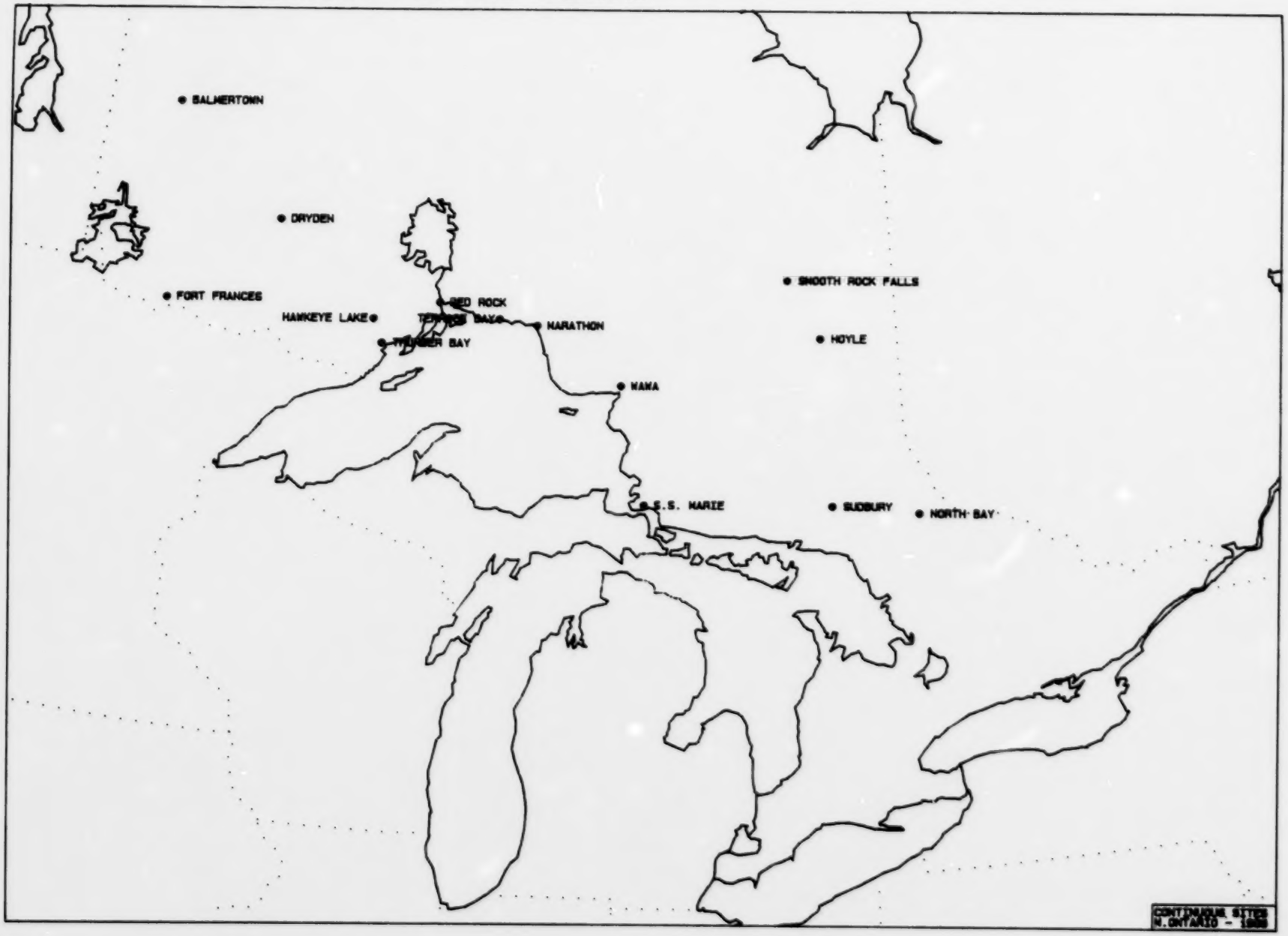
Annual geometric mean (ug/m3)

City	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BRAMALEA	9.2	9.0	8.2	8.8	9.0	10.8	7.7	8.8	7.7	9.7
ETOBICOKE	12.9	13.8	12.1	11.3	8.8	9.3	7.7	8.7	8.2	8.4
HAMILTON	13.6	12.5	9.6	9.6	10.1	10.9	8.8	11.5	13.0	10.9
KITCHENER	11.4	11.4	9.9	8.5	7.0	7.7	5.7	7.6	9.8	5.8
LONDON	10.2	10.7	8.1	7.9	7.3	8.7	6.9	7.5	9.4	5.9
MISSISSAUGA	8.9	10.3	10.3	9.5	10.0	10.7	7.1	7.1	9.2	6.1
NORTH BAY	7.5	8.2	6.6	6.3	6.6	7.1	6.0	4.5	7.2	8.3
NORTH YORK	11.2	11.7	9.1	8.8	8.0	7.3	7.7	7.3	8.0	7.3
OSHAWA	10.7	10.1	9.5	8.9	8.7	8.4	7.2	8.1	10.3	6.9
PORT HOPE	10.2	7.5	7.0	5.2	5.6	7.1	6.5	5.5	7.2	7.0
SCARBORO	11.6	11.7	9.1	8.6	8.4	8.2	7.0	7.7	7.8	5.6
S.S. MARIE	-	10.1	7.8	7.7	7.0	6.8	7.2	5.1	6.4	8.0
SUDBURY	8.4	10.6	9.8	7.3	8.5	7.4	5.2	5.8	8.2	6.3
THUNDER BAY	5.4	6.5	7.8	6.4	4.0	4.3	3.5	3.6	2.9	3.2
TORONTO	13.1	12.9	10.1	9.5	8.7	8.0	7.3	8.0	9.5	7.2
WINDSOR	12.7	12.6	12.0	9.9	8.7	8.6	8.5	10.5	11.3	10.4

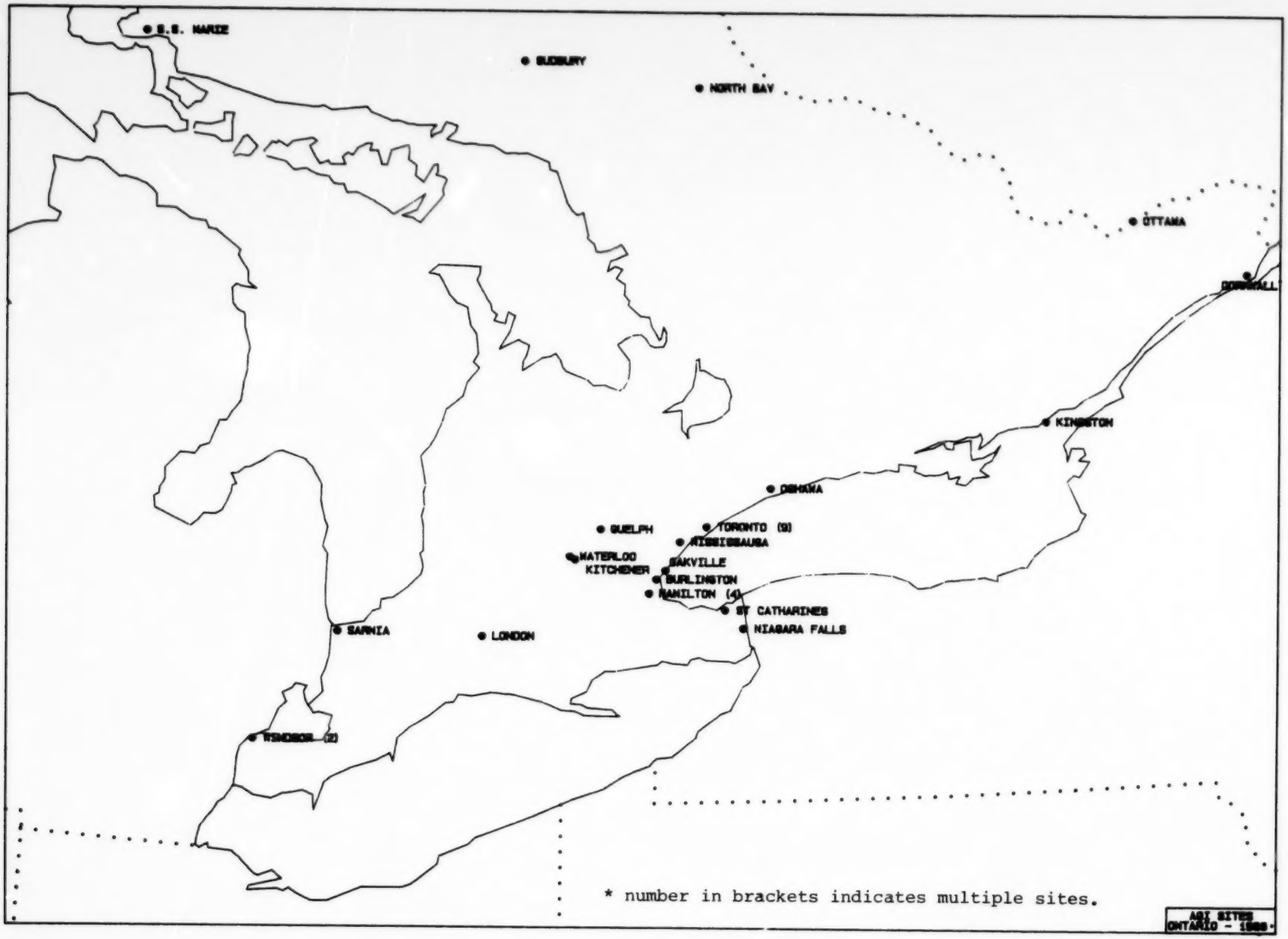
MAP 1 LOCATIONS OF CONTINUOUS MONITORING - S. ONTARIO



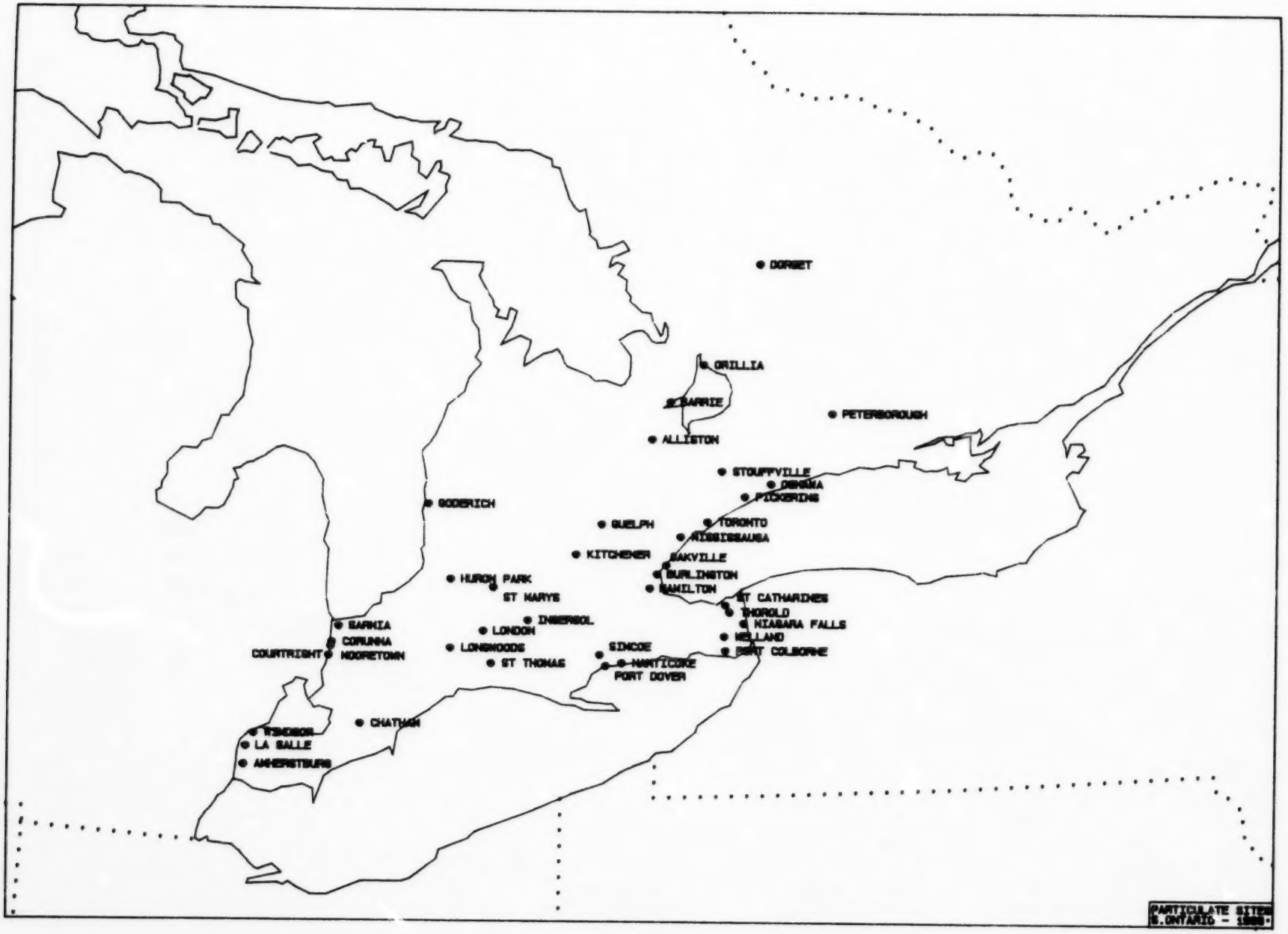
MAP 2 LOCATIONS OF CONTINUOUS MONITORING - N. ONTARIO



MAP 3 LOCATION OF AQI SITES



MAP 4 LOCATIONS OF DAILY MONITORING - S. ONTARIO



MAP 5 LOCATIONS OF DAILY MONITORING - N. ONTARIO